INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: December 22, 2010

RE: Subaru of Indiana / 157-29566-00060

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

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 enclosed matter. 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.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 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, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot12/03/07

IDEM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

December 22, 2010

Ms. Denise Coogan
Subaru of Indiana Automotive, Inc.
P. O. Box 5689
Lafayette, Indiana 47903

Re: 157-29566-00050
PSD/Significant Source Modification to
Part 70 Source (TVOP 157-5906-00050)

Dear Ms. Coogan:

Subaru of Indiana Automotive, Inc. was issued Part 70 Operating Permit 157-5906-00050 on June 28, 2004 for an automotive and light-duty truck assembly plant. An application to modify the Part 70 source was received on August 16, 2010. Pursuant to 326 IAC 2-7-10.5, and 326 IAC 2-2, a PSD/Significant Source Modification is hereby approved for SIA to make the following changes at their existing source allowing an increase in production rate from 262,000 vehicles per year to 310,000 vehicles per year.

(a) Stamping Shop – involves the stamping of sheet metal using equipment capable of forming various components of a vehicle body (doors, roofs, fenders, hoods). The building will be extended to accommodate the increase in production. This operation is listed as an insignificant activity.

(b) Body Shop – The body shop utilizes variety of resistance welding and other equipment to merge the vehicle body components from the stamping shop to form the metal shell of the vehicle body. SIA is proposing to add storage capacity to the body shop in order to accommodate the increase in vehicle production. No physical modification to the existing equipment at the shop will be made.

(c) Paint Shop –

(1) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001 – Current system is using waterborne technology with the oven controlled by a Catalytic Incinerator. A physical change is being made to the Oven Staging/Cool Down Area. Vehicles that come out of the oven typically enter this staging area where they continue to cool prior to moving on to the sealer deck. The number of vehicles in this staging area is the basis for what can be processed through the primary paint system. Currently, the staging area is not sufficient to hold enough vehicles to support the proposed increase in production volumes.

No physical changes will occur to the ED Coating Line's Dip/Rinse Tanks and Curing Oven.

(2) The Twotone and Repair Booth (part of the Topcoat Body Paint System) will be physically changed by replacing the existing manual application system to allow for the application of waterborne basecoat and solventborne clearcoat materials. After the change, the Twotone Coating Line will be referred to as Topcoat #3.

The Plastic Bumper Line (Unit 005) is being converted from a solventborne system to a waterborne system (primer and basecoat only, clearcoat will remain a solventborne material). Within the primer and basecoat system, a heated flash zone will be installed (new burners at 2.5 MMBtu/hr each). No other changes are being made to the Plastic Bumper System.

(3) Three (3) new natural gas-fired heaters for the Heated Flash Zone Systems each with a maximum heat input capacity of 2.5 MMBtu/hr are being proposed to provide additional paint curing for the waterborne materials utilized in the Twotone and Plastic Bumper Systems.

(4) No physical changes will be made to the following operations although they will experience an increase in utilization as a result of the project: Sealing and PVC Undercoating Line, Intermediate (Surfacer) Coating Line, Blackout and Wax Operation, and the Plastic Fascia Coating Line.

(5) Trim Line, identified as Unit 010 – There will be an increase in the conveyor's line speed to allow for an increase in the number of assembled units.

(d) Engine Assembly Facility – Changes to the buffer, storage and line speed will occur.

(e) Miscellaneous Support Functions – Various support functions, such as the paint mixing rooms, bulk storage tanks (i.e., gasoline tank, purge thinner tank and waste purge thinner tank), Purge Solvent Recovery Systems (excluding Plastic Bumper Paint Line System and Twotone Systems, where changes will be made to utilize waterborne materials in these two paint line systems) will not be physically changed to accommodate the increase in capacity. These support functions will however experience an increase in utilization.

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Revocation of Permits [326 IAC 2-2-8]
Pursuant to 326 IAC 2-2-8(a)(1), this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a period of eighteen (18) months or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

6. Pursuant to 326 IAC 2-7-10.5(I) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the permitted changes. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(I)(2) and 326 IAC 2-7-12 Operation is not approved until the significant permit modification has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, and ask for Aida De Guzman or extension (3-4972), or dial (317) 233-4972.

Sincerely,

Matthew Stuckey, Chief
Permits Branch
Office of Air Quality

Attachments
APD

cc: EPA Region V
Tippecanoe County
Tippecanoe County Health Department
Compliance and Enforcement Branch
Permit Administration Support Section

IDEM
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
Mitchell E. Daniels Jr.
Governor
Thomas W. Easterly
Commissioner
100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

PSD/SIGNIFICANT SOURCE MODIFICATION TO A PART 70 SOURCE OFFICE OF AIR QUALITY

Subaru of Indiana Automotive, Inc.
5500 State Road 38 East
Lafayette, Indiana 47905

(herein known as the Permittee) is hereby authorized to construct subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this Permit.

This approval 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.
This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions.

PSD/Significant Source Modification No. 157-29566-00050	
Issued by: Matthew Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: December 22, 2010

TABLE OF CONTENTS

SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates an automotive and light-duty truck assembly plant.

Source Address:	5500 State Road 38 East, Lafayette, IN 47905
Mailing Address:	P.O. Box 5689, Lafayette, IN 47903
General Source Phone Number:	(765) 449-1111
SIC Code:	3711
County Location:	Tippecanoe
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules; Major Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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

(a) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) ED Body Pretreatment area;

(2) One (1) ED Pretreatment Drying Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 5.55 MMBtu/hr;

(3) One (1) insignificant boiler for paint temperature control, with a heat input capacity of 4.0 MMBtu/hr;

(4) Two (2) insignificant pretreatment boilers for warming water surrounding the ED Body Coating Tank, each with a heat input capacity of 1.045 MMBtu/hr;

(5) One (1) ED Body Coating Tank, utilizing dipping as the method of application;

(6) One (1) ED Body Oven, with five (5) natural gas-fired burners totaling 13.7 MMBtu/hr, using a 1.5 MMBtu/hr natural gas-fired catalytic oxidizer (B-ED) as VOC control, and exhausting to one (1) stack, identified as B-ED Inc. (emissions from the entrance to, and exit from, the ED Body Oven use no controls and exhaust to one (1) stack, identified as B-ED Hood Exhaust); and

(7) One (1) ED Body Cool Down area.

(b) Sealing and PVC Undercoating Line, identified as Unit 002, with a capacity of 60 units per hour, consisting of the following units:

(1) One (1) PVC Coating Booth #1, constructed in 1989, utilizing electrostatic application system and pedestal robotic spray system, using a dry filter as particulate matter control, and exhausting to one (1) stack, identified as PVC-1-2;

(2) One (1) PVC Coating Booth #1 Preheat, constructed in 1989, with one (1) natural gas-fired burner with a heat input capacity of 16.8 MMBtu/hr;

(3) One (1) PVC Coating Booth #2, constructed in 1999, utilizing the airless spray method of application, using a water wash as particulate matter control, and exhausting to one (1) stack, identified as PVC-Booth 2;

(4) One (1) PVC Coating Booth #2 Preheat, constructed in 1999, with one (1) natural gas-fired burner with a heat capacity of 16.8 MMBtu/hr;

(5) One (1) PVC Seal Oven, constructed in 1989, with two (2) insignificant natural gas-fired burners totaling 6.94 MMBtu/hr, using no controls, and exhausting to one (1) stack, identified as PVC-Oven Exhaust;

(6) One (1) PVC Cool Down area, constructed in 1989, using no controls, and exhausting to one (1) stack, identified as PVC Cooling; and

(7) One (1) Sound Deadener Operation approved in 2010 for construction, using no controls and exhausting to one (1) stack, identified as SD Stack.

(c) Topcoat System, identified as Unit 003, with a capacity of 60 units per hour, constructed in 1989, and modified in 2006 and 2008 consisting of the following units:

(1) One (1) Topcoat #1 Booth, utilizing electrostatic air atomized, electrostatic bell method of application, and robotic bells and automatic spray applicators, using a water wash as particulate matter control, and exhausting to nine (9) stacks, identified as TC1-1 through TC1-10. One (1) natural gas-fired dry off oven, between the basecoat and clearcoat zones, with a heat input capacity of 5 MMBtu/hr.

(2) One (1) Topcoat #1 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(3) One (1) Topcoat #1 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(4) One (1) Topcoat #1 Oven, with three (3) insignificant natural gas-fired burners, using a 3.0 MMBtu/hr natural gas-fired catalytic incinerator (TC-1) as VOC control, and exhausting to one (1) stack, identified as TC-1 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-1 Ex.);

(5) One (1) Topcoat #1 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-1 O.Cl.;

(6) One (1) Topcoat #2 Booth, utilizing the electrostatic air atomized, electrostatic bell or similar method of application, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC2-1 through TC2-10. One (1) natural gas-fired dry off oven between the base coat and clear coat zones with a heat input capacity of 8 MMBtu/hr;

(7) One (1) Topcoat #2 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(8) One (1) Topcoat #2 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(9) One (1) Topcoat #2 Oven, with three (3) insignificant natural gas-fired burners, using a 1.5 MMBtu/hr natural gas-fired catalytic incinerator (TC-2) as VOC control, and exhausting to one (1) stack, identified as TC-2 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-2 Ex.).

(10) One (1) Topcoat #2 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-2 O.Cl.;

(11) One (1) Topcoat Booth #3, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to five (5) stacks, identified as TUT-1 through TUT-5;

(12) One (1) Topcoat Booth #3, Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 16.26 MMBtu/hr;

(13) One (1) Topcoat Booth #3 Reheat, with one (1) insignificant natural gas-fired burner;

(14) One (1) Topcoat Booth #3 Oven, with three (3) insignificant natural gas-fired burners, using a 2.5 MMBtu/hr natural gas-fired catalytic incinerator (TUT) as VOC control, and exhausting to one (1) stack, identified as TUT-O-1-2;

(15) One (1) Topcoat Booth #3 Cool Down area; and

(16) One (1) Wet Sand Repair Dryoff Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 1.49 MMBtu/hr.

(17) One (1) Topcoat Booth #3 natural gas-fired flash zone heater with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction.

(d) Intermediate (Surfacer) Coating Line, identified as Unit 004, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) Intermediate Working Stage burner, with a heat input capacity of 19.74 MMBtu/hr;

(2) One (1) Intermediate Coating Booth, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to six (6) stacks, identified as SUR-2 through SUR-7;

(3) One (1) Intermediate Booth Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 28.275 MMBtu/hr;

(4) One (1) Intermediate Booth Reheat burner, with two (2) insignificant natural gas-fired burners;

(5) One (1) Intermediate Coating Oven, with five (5) insignificant natural gas-fired burners totaling 12.42 MMBtu/hr, using a 1.0 MMBtu/hr natural gas-fired catalytic incinerator (SUR) as VOC control, and exhausting to one (1) stack, identified as SUR-1. (emissions from the entrance to and exit from the Intermediate Coating Oven use no controls and exhaust to one (1) stack, identified as Surfacer Hood Exhaust); and

(6) One (1) Intermediate Cool Down area, using no controls, and exhausting to one (1) stack, identified as Surfacer Cooling.

(e) Plastic Bumper Coating Line (PBL), identified as Unit 005, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) PBL Paint Booth, utilizing the air atomization method of spraying, using a water wash as particulate matter control, and exhausting to three (3) stacks, identified as BPR-1, BPR-2, and BPR-JR;

(2) One (1) PBL Booth Preheat, with one (1) natural gas-fired burner with a heat input capacity of 17.10 MMBtu/hr;

(3) One (1) PBL Booth Reheat, with two (2) insignificant natural gas-fired burners;

(4) One (1) PBL Oven, using a 2.0 MMBtu/hr natural gas-fired thermal incinerator as VOC control, and exhausting to one (1) stack, identified as BPR Inc.; and

(5) One (1) PBL Cool Down area.

(6) Two (2) PBL natural gas-fired flash zone heaters each with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction.

(f) Anticorrosion Coating, identified as Unit 006, with a capacity of 60 units per hour, constructed in 1989, and including the following equipment:

(1) One (1) Black Coat and Wax Booth, utilizing the air-assisted method of spraying, using a dry filter as particulate matter control, exhausting to BCW Stack;

(2) One (1) Black and Wax Coat natural gas-fired burner, with a heat input capacity of 24.0 MMBtu/hr;

(3) One (1) Anticorrosion Coating Booth, utilizing the air-assisted method of spraying, using a water wash as particulate matter control, exhausting to Anticorrosion Stack; and

(4) One (1) insignificant Anticorrosion Coating natural gas-fired burner.

(g) One (1) plastic fascia paint line system (PFPLS#2), which will coat front and rear bumpers, and left and right side molding panels, with a maximum capacity of 150,118 units per year, consisting of the following units:

(1) One (1) primer spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack , identified as PB2(a).

(2) One (1) basecoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(b).

(3) One (1) clearcoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(c).

(4) Two (2) paint flash off areas for the primer zone and basecoat zone, exhausting to stack PB2(d), which includes natural gas-fired dry off ovens, with a total heat input capacity of 1.1 MMBtu/hr.

(5) Three (3) natural gas-fired air intake units, each with a heat input capacity of 3.1 million British thermal units per hour (MMBtu/hr).

(6) One (1) fascia paint line natural gas-fired curing oven , with a heat input capacity of 2.5 MMBtu/hr, controlled by a catalytic/thermal oxidizer with a heat input capacity of 1.1 MMBtu/hr, exhausting to one (1) stack, identified as PB2(g).

(7) One paint mix room.

(h) Final Repair (Touchup) painting, identified as Unit 007, with a capacity of 10 units per hour, constructed in 1989, and including the following equipment:

(1) One (1) Touchup IPC Booth, located in the In-Process Control area, utilizing the air atomization method of spraying;

(2) One (1) Touchup Trim Booth, located in the Trim area, utilizing the air atomization method of spraying, using a dry filter as particulate matter control; and

(3) One (1) insignificant Touchup Trim natural gas-fired burner.

(i) One (1) paint mixing room for the Plastic Bumper Coating Line, identified as Unit 008, constructed in 1989, using no controls, and exhausting to three (3) vents, identified as Mix-1, Mix-2, and Mix-3.

(j) One (1) paint storage room for the ED Coating Line, identified as Unit 009, constructed in 1989.

(k) Trim Line, identified as Unit 010, application in the Body Shop and Trim Shop of adhesives and sealers to various vehicle parts, constructed in 1989.

(l) Three (3) storage tanks, identified collectively as Unit 011, and including the following equipment:

(1) Gasoline storage tank, with a capacity of 15,000 gallons, constructed in 1988, using a certified vapor collection and control system;

(2) Purge thinner storage tank, with a capacity of 5,000 gallons, constructed in 1988, using a certified vapor collection and control system; and

(3) Waste purge thinner storage tank, with a capacity of 6,000 gallons, constructed in 1992.

(m) Purge solvent recovery system, identified as Unit 012, with a maximum throughput of 168,000 gallons per year, constructed in 2001, and including the following equipment:

(1) Dirty purge Tank A, with a capacity of 1,096 gallons;

(2) Distillation overs Tank B, with a capacity of 1,096 gallons;

(3) Clean solvent Tank C, with a capacity of 1,096 gallons;

(4) Methanol Tank E, with a capacity of 1,096 gallons;

(5) Xylene Tank, with a capacity of 1,096 gallons;

(6) Acetone Tank, with a capacity of 1,096 gallons;

(7) Clean purge Tank OK, with a capacity of 1,949 gallons; and

(8) One (1) distillation unit.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

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

(a) Space heaters, process heaters, or boilers using the following fuels: Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) Six (6) general hot water boilers with a combined heat input capacity of 23.08 MMBtu/hr. [40 CFR 52.21] [326 IAC 2-2] [326 IAC 6-2-4]

(2) Other insignificant natural gas combustion units: [40 CFR 52.21] [326 IAC 2-2]

(A) Stamping Shop Steam Cleaner

(B) Distillation Room Heater

(C) Makeup Air Units (7)

(D) Unit Heaters (50)

(E) Door Heaters (14)

(F) Air Handling Units (44)

(G) Heating and Ventilation Units (6)

(b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment [326 IAC 2-2]

(1) One (1) Stamping Shop; and

(2) Two (2) body lines within one (1) Body Shop with MIG and resistance welding robots, and two grinding booths.

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

(d) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: [326 IAC 6-3-2]

(1) Grinding and machining operations occurring in the engine manufacturing facility; and

(2) Other deburring; buffing; polishing; abrasive blasting activities; pneumatic conveying; and woodworking operations.

(e) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:

(1) Gasoline Fill Operations (Benzene, Naphthalene, Ethylbenzene, Styrene, Toluene, Hexane, Xylene, Methyl Tert-butyl Ether) [40 CFR 52.21] [326 IAC 2-2]

(2) The following storage tanks permitted under OP 79-09-93-0454, issued on

July 26, 1989:

(A) One (1) double-walled fixed-roof engine oil storage tank, with a capacity of 10,000 gallons; and

(B) One (1) double-walled fixed-roof gear oil storage tank, with a capacity of 10,000 gallons;

(3) The following activities permitted under E 157-14535-00050, issued on October 10, 2001: assembly and testing (including engine test stands);

(4) Manual solvent wipedown.

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

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

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

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

SECTION B GENERAL CONDITIONS

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

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

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

(a) This permit, T157-5906-00050, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

B.3 Term of Condition [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]

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 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.6 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.7 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.8 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. The submittal by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34). 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.9 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

B.10 Annual Compliance Certification [326 IAC 2-7-6(5)]

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

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

and

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

B.11 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, 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.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

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

B.12 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 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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)(9) 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.

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.13 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 as provided in this Condition. The permit shield provides that compliance with the conditions of this permit shall be deemed in 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) IDEM, OAQ has made the following determinations regarding this source:

None of the facilities listed in Section A, Emission Units and Pollution Control Equipment Summary are subject to the requirements of the following rules because of the following reasons:

(1) The thermal incinerators are not subject to the requirements of 40 CFR Part 60, Subpart E (Standards of Performance for Incinerators) because none of the incinerators at the source burns or combusts solid waste as defined in 40 CFR 60.51(b).

(2) The thermal incinerators are not subject to the requirements of 40 CFR Part 60, Subpart CCCC (Standards of Performance for Commercial and Industrial Solid Waste Incineration Units) because none of the incinerators at the source is a new incineration unit as defined in 40 CFR 60.2015.

(3) The insignificant engine test stands are not subject to the requirements of 40 CFR Part 63, Subpart PPPPP (National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands) because construction of each engine test stand facility at the source commenced in October 2000. Because this construction date is prior to May 14, 2002, SIA is an existing affected source as defined in 40 CFR 63.9290(a)(1), and therefore has no applicable requirements under this Subpart, pursuant to 40 CFR 63.9290(b).

(c) 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.

(d) 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.

(e) 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.

(f) 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).

(g) 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)]

(h) 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.14 Prior Permits Superseded [326 IAC 2-1.1-9.5] [326 IAC 2-7-10.5]

(a) All terms and conditions of previous permits 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 permit.

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. 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.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 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 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 the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(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.17 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(40). The renewal application does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

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 in writing by IDEM, OAQ, any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

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

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

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

Any such application shall be certified by the “responsible official” as defined by 326 IAC 2-7-1(34).

(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.19 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 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.20 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), (c), or (e), 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 emissions trades that are subject to 326 IAC 2-7-20(b), (c), or (e). 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), (c)(1), and (e)(2).

(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(36)) 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 the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(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.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-17-3-2] [IC 13-30-3-1]

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.23 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

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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.24 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 (BLT)), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

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

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

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

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

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

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

(a) The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

(b) The thermal incinerators required by this permit for the control and destruction of VOC emissions from various coating system ovens are not incinerators within the meaning and intent of 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

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

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-52 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 by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 14-10-4-1, 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 Accredited Asbestos inspector is not federally enforceable.

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

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

(a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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 61-52 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 certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

Unless otherwise specified in this permit, all monitoring requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.12 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.

(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.13 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 prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval 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 ninety (90) days after the date of issuance of this permit.

The ERP does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) 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.14 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.15 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) Upon detecting an excursion or exceedance, the Permittee shall 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 emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned 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 within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(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;

(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 maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.16 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 take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) 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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.17 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]

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

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

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (32) ("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 the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The emission statement 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.18 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

(c) If there is a "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-3 (ll)) at an existing emissions unit, other than projects at a source with a Plant-wide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1 (ee) and/or 326 IAC 2-3-1(z)) and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1 (rr) and/or 326 IAC 2-3-3(mm)), the Permittee shall comply with following:

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

(A) A description of the project.
(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;
(ii) Projected actual emissions;
(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1(mm)(2)(A)(3); and
(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

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

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

C.19 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 2-3]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-52 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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

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

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

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

(g) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

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

(2) The annual emissions calculated in accordance with (c)(2) and (3) in Section C- General Record Keeping Requirements.

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

(4) Any other information that the Permittee deems fit to include in this report,

Reports required in this part shall be submitted to:

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

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

Stratospheric Ozone Protection

C.20 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 the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

Source-Wide Operations

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

D.1.1 Prevention of Significant Deterioration (PSD) - Particulate Matter [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, CP 157-4485-00050, issued September 13, 1995, CP 157-9619-00050, issued February 11, 1999, and PSD/SSM 157-29566-00050, the Permittee must adhere to the following conditions:

(a) The source shall not produce greater than 310,000 vehicles per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The particulate (PM/PM10) emissions from PVC #1 Coating Booth, Topcoat #1 Coating Booth, Topcoat #2 Coating Booth, Topcoat Booth #3, Intermediate (Surfacer) Coating Booth, Plastic Bumper Coating Booth, Black Coat and Wax Coating Booth, Anticorrosion Coating Booth, Touchup Trim Coating Booth, Touchup IPC Coating Booth, source-wide natural gas combustion, and all insignificant facilities that were permitted by the PSD (79) 1651 Revision shall be limited to less than 23.1 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) The visible emissions from any plant stack, vent or other emission point shall not exceed 10% opacity.

(d) The total natural gas combustion at the source shall not exceed 2,380 million standard cubic feet per 12 consecutive month period with compliance determined at the end of each month.

Compliance with Condition D.1.1(a) and (d) shall satisfy the requirements of 326 IAC 2-2.

Compliance with Condition D.1.1(b) shall render the requirements of 326 IAC 2-2 not applicable.
.

D.1.2 Prevention of Significant Deterioration (PSD) - Carbon Monoxide and Sulfur Dioxide [326 IAC 2-2]

Compliance with the total natural gas combustion limitation contained in Condition D.1.1(d) is equivalent to CO and SO2 emissions of less than 100 tons per year, and 40 tons per year, respectively, and renders the requirements of 326 IAC 2-2 not applicable.

D.1.3 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2][326 IAC 8-1-6]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and Significant Permit Modification 157-22703-00050, 326 IAC 2-2-3, and 326 IAC 8-1-6, the total VOC emissions from all surface coating and associated purge solvent operations, wiping/cleaning solvents, and storage shall not exceed 1,084.5 tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with this limitation, and those contained in Conditions D.2.1, D.4.1, D.5.1, D.6.1, D.7.1, and D.8.1, shall satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1-6.

Compliance with the VOC limit in this condition, and the VOC limits in Conditions D.3.5 and D.4.6, shall make 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable to the source modification permitted in SSM 157-22702-00050.

Compliance Determination Requirements

D.1.4 Prevention of Significant Deterioration (PSD) [326 IAC 2-2] [40 CFR 52.21]

Compliance with the particulate (PM/PM10) emission limit in Condition D.1.1(b) shall be determined by using the following equation, which calculates pounds of particulate emissions per month, and adding the result to the calculated particulate emissions from the previous eleven months:

Total Particulate Emissions (lb/month) = PVC #1 Coating PM/PM10 + Topcoat #1 Coating PM/PM10 + Topcoat #2 Coating PM/PM10 + Topcoat Booth #3 PM/PM10 + Intermediate (Surfacer) Coating PM/PM10 + Plastic Bumper Coating PM/PM10 + Black Coat and Wax Coating PM/PM10 + Anticorrosion Coating PM/PM10 + Touchup Trim Coating PM/PM10 + Touchup IPC Coating PM/PM10 + Natural Gas Combustion PM/PM10 + Insignificant PM/PM10 Sources

Where:

$$\text{PM/PM10 emissions from each coating booth} = \sum_{i=1}^{n} (Ci * D\,i * Si) * (1-TE) * (1-CE);$$

Natural Gas Combustion PM/PM10 = natural gas usage (MMCF/month) * 7.6 lb PM/MMCF;

Insignificant PM/PM10 Sources = PM/PM10 emissions in lb/month from insignificant facilities that were permitted by the PSD (79) 1651 Revision;

Ci = usage of coating i in gallons per month;

Di = density of coating i in pounds per gallon;

Si = solids content of coating i, expressed as a decimal weight percent;

TE = solids transfer efficiency of the applicator for each booth, based on transfer efficiency determination tests; and

CE = overall particulate control efficiency for each booth, based on manufacturer data.

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

D.1.5 Record Keeping Requirements

(a) To document compliance with Conditions D.1.1, D.1.2 and D.1.3, the Permittee shall maintain records in accordance with (1) through (11) below. Records maintained for (1) through (11) shall be taken as stated below and shall be complete and sufficient to establish compliance with the particulate emission limit established in Condition D.1.1(b), the natural gas combustion limit established in Conditions D.1.1(d) and D.1.2 and the VOC emission limit established in Condition D.1.3. 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 (including purge solvents and thinners) used less water.

(2) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(3) The total VOC emissions from coatings and solvents (including purge solvents and thinners) for each day.

(4) The amount of coating material and solvent (including purge solvents and thinners) transferred off-site for disposal or recycling for each day.

(5) The density of each coating.

(6) The solids content of each coating, expressed as a decimal weight percent.

(7) The particulate transfer efficiency and particulate control efficiency for each surface coating booth, kept on a monthly basis, and an explanation of how these figures were determined.

(8) The process weight rate of the insignificant robotic welding, brazing equipment, cutting torches, soldering equipment, grinding equipment, and machining equipment.

(9) Any process information necessary to calculate particulate (PM/PM10) emissions from other insignificant operations described in Section D.7 (e.g., deburring, buffing, polishing, abrasive blasting activities, pneumatic conveying, woodworking operations, etc.).

(10) A log of the dates of use.

(11) The plant-wide metered natural gas usage for each month.

(b) To document compliance with Condition D.1.1(a), the Permittee shall maintain records of daily vehicle production.

(c) To document compliance with the Condition D.1.3, the Permittee shall monitor and record in accordance with Condition C.18(c), the post-change annual VOC emissions from the existing emission units that could result in a significant emissions increase as a result of the project described in SSM 157-22702-00050.

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

D.1.6 Reporting Requirements

(a) Reports of monthly production totals shall be submitted to IDEM, OAQ on a quarterly basis to comply with Condition D.1.1(a). These reports shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

(b) Based on records required by Condition D.1.5(a), and to demonstrate compliance with Condition D.1.1(b), reports of monthly particulate (PM/PM10) emissions shall be submitted to IDEM, OAQ on a quarterly basis to comply with Condition D.1.1(b). This report shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

(c) Reports of monthly natural gas usage shall be submitted to IDEM, OAQ on a quarterly basis to comply with Conditions D.1.1(d) and D.1.2. These reports shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the month period being reported.

(d) Based on records required by Condition D.1.5(a), reports of monthly VOC emissions from surface coating operations and associated purge solvent operations and storage shall be submitted to IDEM, OAQ on a quarterly basis to comply with Condition D.1.3. These reports shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(e) Plastic Bumper Coating Line (PBL), identified as Unit 005, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) PBL Paint Booth, utilizing electrostatic application system, using a water wash as particulate matter control, and exhausting to three (3) stacks, identified as BPR-1, BPR-2, and BPR-JR;

(2) One (1) PBL Booth Preheat, with one (1) natural gas-fired burner with a heat input capacity of 17.10 MMBtu/hr;

(3) One (1) PBL Booth Reheat, with two (2) insignificant natural gas-fired burners;

(4) One (1) PBL Oven, using a 2.0 MMBtu/hr natural gas-fired thermal incinerator as VOC control, and exhausting to one (1) stack, identified as BPR Inc.; and

(5) One (1) PBL Cool Down area.

(6) Two (2) PBL natural gas-fired flash zone heaters each with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction.

(h) One (1) paint mixing room for the Plastic Bumper Coating Line, identified as Unit 008, constructed in 1989, using no controls, and exhausting to three (3) vents, identified as Mix-1, Mix-2, and Mix-3.

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

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

D.2.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2][326 IAC 8-1-6]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, 326 IAC 2-2-3, and 326 IAC 8-1-6, BACT for the Plastic Bumper Coating Line is the following:

(a) The daily VOC emissions from the PBL Coating Booth shall not exceed 38.2 pounds of VOC per gallon of applied solids (4.57 kilograms of VOC per liter of applied solids). This limit applies to the weighted average of all plastics bumper coatings. Compliance with this limit shall be demonstrated pursuant to Condition D.2.6.

(b) The thermal incinerator, used to control VOC emissions from the PBL Oven, shall achieve a minimum 20% capture efficiency and 90% destruction efficiency.

(c) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(d) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.4.1, D.5.1, D.6.1, D.7.1, and D.8.1, shall satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1.

D.2.2 Prevention of Significant Deterioration - Best Available Control Technology for Nitrogen Oxides (NOx) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for NOx for the natural gas combustion equipment described in this section is the following:

(a) The NOx emissions from the PBL Oven shall not exceed 0.10 pounds per million Btu (lb/MMBtu) heat input;

(b) The NOx emissions from the PBL Booth Preheat Burner, insignificant PBL Oven thermal incinerator, and the two (2) insignificant PBL Booth Reheat burners shall not exceed 0.12 pounds per million Btu (lb/MMBtu) heat input each; and

(c) The PBL Preheat burner, Reheat burners, and Oven shall use low-NOx natural gas burners.

Compliance with these limitations, and those contained in Conditions D.4.2, D.5.2, D.6.2, and D.8.2, shall satisfy the requirements of 326 IAC 2-2.

D.2.3 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate emissions from the PBL Paint Booth shall be controlled by a water wash and the Permittee shall operate the control device in accordance with manufacturer's specifications.

D.2.4 Particulate Emissions from Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the two (2) 2.5 MMBtu/hour PBL flash zone heaters shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.2.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

Compliance Determination Requirements

D.2.6 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Compliance with the VOC emission limit in Condition D.2.1 shall be determined with the following equation:

VOC emissions (lb VOC/gal applied solids) = $[\sum(C \times U) / \sum(S \times TE)] \times [1 - (CE \times DE)]$

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating, as applied;
U is the usage rate of the coating in gallons per day;
S is the usage rate of coating solids in gallons per day;
TE is the transfer efficiency of the applicator;
CE is the minimum capture efficiency of the incinerator required in Condition D.2.1; and
DE is the minimum destruction efficiency of the incinerator required in Condition D.2.1.

D.2.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

(a) Pursuant to 326 IAC 8-1-2(a), the Permittee shall operate the incinerator at all times the PBL Oven is in operation to ensure compliance with Condition D.2.1.

(b) The incinerator on the PBL Oven shall be operated such that it achieves the minimum capture and destruction efficiencies specified in Condition D.2.1.

D.2.8 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

Within one hundred and eighty (180) days after issuance, the Permittee shall conduct a performance test to verify VOC control efficiency as per Condition D.2.1 for the thermal incinerator utilizing methods as approved by the Commissioner. This test shall be repeated at least once every thirty (30) months (2.5 years) from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.2.9 Thermal Incinerator Temperature [326 IAC 2-7-5(3)]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal incinerator for measuring operating temperature. For the purposes of this condition, continuous monitoring shall mean no less often than once per minute. The output of this system shall be recorded as a three-hour average. If the continuous monitoring system is not in operation, the temperature will be recorded manually once in a 15-minute period. Nothing in this permit shall excuse the Permittee from complying with the requirement to continuously monitor the temperature of the thermal incinerator.

(b) From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal incinerator at or above the three-hour average temperature of 1,400 °F. The Permittee shall determine the minimum three-hour average operating temperature from the most recent valid stack test that demonstrates compliance with Condition D.2.1. This determination must be approved by IDEM.

(c) The Permittee shall then operate the thermal incinerator at or above the minimum three-hour average temperature as observed during the most recent compliant stack test following approval of that temperature.

(d) The Permittee take appropriate response steps in accordance with Section C - Response to Excursion and Exceedances whenever the three-hour average temperature of the thermal incinerator is below the compliant three-hour average temperature. A three-hour average temperature that is below the compliant three-hour average temperature is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursion and Exceedances, shall be considered a deviation from this permit.

D.2.10 Parametric Monitoring [326 IAC 2-7-5(3)]

(a) The Permittee shall determine the appropriate duct pressure or fan amperage for the thermal incinerator on the PBL Line from the most recent valid stack test that demonstrates compliance with the permit limits on VOC destruction efficiency and control efficiency as approved by IDEM.

(b) The duct pressure or fan amperage whichever is monitored by the Permittee under this condition, shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

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

D.2.11 Operator Training Program

The Permittee shall implement an operator training program.

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the water wash control system on the Plastic Bumper Coating Line. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper flow of water through the water pan of the water wash system, and other factors that affect water pan capture efficiency (e.g., debris in the water pans), and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

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

D.2.12 Record Keeping Requirements

(a) To document compliance with Conditions D.2.1, D.2.9, and D.2.10, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.1, and the compliance determination requirements established in Conditions D.2.9, and D.2.10. 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 (as applied) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(4) The volume weighted average VOC content of the coatings used (as applied) for each day.

(5) The continuous temperature records (on a three-hour average basis) for the thermal incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(6) Records of any thermal incinerator shutdowns due to duct pressure or fan amperage deviations.

(7) Daily records of the duct pressure or fan amperage.

(b) To document compliance with Condition D.2.11, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

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

D.2.13 Reporting Requirements

A monthly report of the daily VOC content of the coatings used, based on a volume weighted average from the PBL Coating Booth and monthly summary of the information to document the compliance status with Condition D.2.1, shall be submitted not later than thirty (30) days after the end of the month being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.3 SOURCE OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(g) One (1) plastic fascia paint line system (PFPLS#2), which will coat front and rear bumpers, and left and right side molding panels, with a maximum capacity of 150,118 units per year, consisting of the following units:

(1) One (1) primer spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(a).

(2) One (1) basecoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(b).

(3) One (1) clearcoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(c).

(4) Two (2) paint flash off areas for the primer zone and basecoat zone, exhausting to stack PB2(d), which includes natural gas-fired dry off ovens, with a total heat input capacity of 1.1 MMBtu/hr.

(5) Three (3) natural gas-fired air intake units, each with a heat input capacity of 3.1 million British thermal units per hour (MMBtu/hr).

(6) One (1) fascia paint line natural gas-fired curing oven, with a heat input capacity of 2.5 MMBtu/hr, controlled by a catalytic/thermal oxidizer with a heat input capacity of 1.1 MMBtu/hr, exhausting to one (1) stack, identified as PB2(g).

(7) One paint mix room.

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

Construction Conditions

General Construction Conditions

D.3.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

D.3.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

D.3.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

D.3.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke Significant Source Modification No.: 157-22702-00050 of this Part 70 permit, as modified by Significant Permit Modification No.: 157-22703-00050, if construction is not commenced within eighteen (18) months after Pemittee’s receipt of Significant Source Modification No.: 157-22702-00050 or if construction is suspended for a continuous period of one (1) year or more.

Operation Conditions

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

D.3.5 Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2] [326 IAC 8-1-6]

The annual VOC usage, including wiping/cleaning solvents, and solvent purging to the plastic fascia paint line (PFPLS#2), and natural gas usage from the combustion devices associated with this fascia paint line and natural gas usage from the combustion devices associated with the fascia paint line and existing Topcoat, Unit 003 modification shall be limited such that the total potential to emit does not exceed 102.6 tons per twelve (12) consecutive month period with compliance demonstrated at the end of each month.

(a) The thermal oxidizer used to control VOC emissions from the curing oven for the fascia paint line system shall achieve a minimum VOC destruction efficiency of 95% and a minimum overall control efficiency (capture efficiency x destruction efficiency) of 21%.

(b) The annual VOC usages of wiping/cleaning solvents and purge solvents minus the amount of VOC in the purge material collected shall be limited to 24.2 tons per twelve (12) consecutive month period with compliance determined at the end of each month. This VOC limit shall account for the capture efficiency from the purge solvent capture systems used each time that any coating applicator in either the primer or the clearcoat spray zone is purged.

(c) The VOC emissions from the combustion devices associated with the plastic fascia paint line and the 5 MMBtu/hr natural gas-fired dry off oven added to the existing Topcoat, Unit 003 shall not exceed 5.5 pound per million cubic feet (lb/MMCF) of natural gas usage, and the total natural gas fuel usage shall not exceed 166.4 million cubic feet per twelve (12) consecutive month period with compliance determined at the end of each month.

Compliance with the limits in this condition and Conditions D.1.3 and D.4.6 shall render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable to the modification permitted in SSM 157-22702-00050.

Compliance with (a) and (b) of this condition shall also satisfy the requirements of 326 IAC 8-1-6.

D.3.6 Volatile Organic Compounds (VOC) Best Available Control Technology [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the Best Available Control Technology (BACT) for the following the plastic fascia paint line shall be as follows:

(a) The exhausts from the fascia paint line curing oven shall be vented to a thermal oxidizer. The thermal oxidizer shall achieve a minimum VOC destruction efficiency of 95%.

(b) The fascia paint line shall comply with the following Best Available Control Technology limitations for Volatile Organic Compounds (VOC):

(1) The VOC emissions, after control, from the primer coating process, shall not exceed 0.90 pound per gallon of coating (lbs/gal).

(2) The VOC emissions, after control, from the basecoat coating process, shall not exceed 1.15 lbs/gal of coating.

(3) The VOC emissions, after control, from the clearcoat coating process, shall not exceed 3.25 lbs/gal of coating.

(c) Good work practices which includes the following:

(1) The use of robotic automatic spray applicators to minimize paint usage.

(2) The use of waterbased coatings for the primer, and basecoat applications.

(3) All paint mixing containers, other than day tanks equipped with continuous agitation systems, which contain organic VOC containing coatings and other materials shall have a cover with no visible gaps in place at all times except when material is being added to or removed from a container, or when mixing or pumping equipment is being placed in or removed from a container.

(4) Solvent-borne purge materials sprayed during paint line cleaning and color changes shall be directed into solvent collection containers. Documentation shall be maintained on-site to demonstrate how these materials are being directed and collected for both the solvent-borne and water-borne purge materials.

(5) Solvent collection containers shall be kept closed when not in use.

(6) Clean-up rags with solvent shall be stored in closed containers.

(7) VOC emissions shall be minimized during cleaning of storage, mixing, and conveying equipment.

(d) The purge solvent capture systems shall have a minimum purge solvent capture efficiency of 80%. Collected purge materials (paint solids and solvent) from the primer and clearcoat applicators shall be retained in closed containers until recycled on-site or shipped offsite for recycling or disposal.

Compliance with this condition shall satisfy the requirements of 326 IAC 8-1-6.

D.3.7 Particulate Matter and Particulate Matter Less Than Ten Microns (PM10) Control [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), the particulate overspray emissions from the fascia paint line (PFPLS#2) shall be controlled by a water wash system and the Permittee shall operate the control device in accordance with the manufacturer's specifications.

D.3.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.3.9 Volatile Organic Compounds (VOC)

(a) Compliance with the VOC content and usage limitations contained in Conditions D.3.5 and D.3.6 shall be determined pursuant to 326 IAC 8-1-4(a)(3) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedure specified in 326 IAC 8-1-4.

(b) In addition to the procedure in section (a) of this condition, compliance with the VOC limit for the solvent purging operation in Conditions D.3.5(b) and D.3.6 shall be determined through the following:

(1) Purge solvent usage and collection shall be monitored separately for the primer coating operations and clearcoat operations. For each of the primer and clearcoat coating systems, the Permittee shall install flow meters to monitor the volume of purge solvent delivered to the spray applicators, and the volume of the purge materials collected for

recycling or disposal. The purge material collection/capture, as a percentage of purge solvent usage shall be determined on a monthly basis as follows:

$$\text{Purge Solvent Collection/Capture Efficiency} = \frac{S_c - R_{cs}}{P_u}$$

Where:

R_{cs} = Residual coating solids in the spray applicator
S_c = Purge material collected (paint solids + solvent)
P_u = Purge solvent usage

(c) Compliance with Condition D.3.5(a), the capture efficiency shall be determined using the "Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22) or guidelines in 40 CFR § 63.3165.

D.3.10 Prevention of Significant Deterioration (PSD) Minor Limits and VOC BACT Limits [326 IAC 2-2] [326 IAC 8-1-6]

(a) Compliance with the VOC limit in Condition D.3.5 shall be determined by using the following equation, which calculates the tons of VOC emissions per month, and adding the result to the calculated VOC emissions from the previous eleven months:

Total VOC Emissions (tons/month) = natural gas combustion units (heaters, curing oven, and oxidizer) VOC+ fascia paint line (wiping/cleaning solvent, and solvent purging) VOC

Where:

(1) Natural Gas Combustion VOC = Natural gas usage (MMCF/month) * 5.5 lb/MMCF

(2) Fascia Paint Line VOC = $\sum$ (Booths C_u x S x C x P) + (Oven C_u x S x C x P x (1-DE)) + (P_u x P_c x P x (1-P_{cw}))

Where:
C_u is coating usage in gallon per unit
S is the percentage booth split with oven (see spreadsheet page 2 of 12)
C is the coating VOC content in pound per gallon
P is the production in units per month
P_u is the purge solvent usage in gallon per unit
P_c is the purge VOC content in pound per gallon
DE is the destruction efficiency of the oxidizer
P_{cw} is the percent purge materials collected/captured for waste recycle

(b) Compliance with the VOC BACT limits in Condition D.3.6 which apply after controls to emissions from the fascia paint line shall be determined by using the following equation:

Booth VOC BACT limit = V_c/C_y

Where:
V_c is the controlled VOC emissions of the booths in pound per year
C_y is the booths coating usage in gallon per year

D.3.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-1-6]

Within sixty (60) days after achieving maximum production rate but no later than one hundred and eighty (180) days after initial startup of the fascia paint line (PFPLS#2), the Permittee shall conduct initial performance tests of the fascia paint line (PFPLS#2), to determine compliance with the limits on VOC destruction efficiency and the control efficiency of the thermal oxidizer, utilizing methods as approved by the Commissioner. This test shall be repeated at least once every two and half (2.5) years from the date of the most recent valid compliance demonstration.

D.3.12 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the fascia paint line curing oven thermal oxidizer for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a three (3) hour average. From the date of issuance of this permit until the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C –Response to Excursions or Exceedances whenever the three (3) hour average temperature is below 1400^{o}F. A three (3) hour average temperature that is below 1400^{o}F is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) The Permittee shall determine the three (3) hourly average temperature from the most recent valid stack test that demonstrates compliance with the limits of Condition D.3.5(a), as approved by IDEM.

(c) On and after the date the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C - Response to Excursions or Exceedances whenever the 3-hour average temperature is below the three (3) hour average temperature as observed during the compliant performance test. A three (3) hour average temperature that is below the three (3) hour average temperature as observed during the compliant performance test is not a deviation of this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Compliance Monitoring Requirements

D.3.13 Operator Training Program

The Permittee shall implement an operator training program for the particulate control system for the fascia paint line (PFPLS#2):

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the water wash control system on the fascia paint line. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper flow of water through the water pan of the water wash system, and other factors that affect water wash capture efficiency (e.g., debris in the water pan), and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

D.3.14 Thermal Oxidizer Parametric Monitoring

(a) The Permittee shall determine the appropriate range of duct pressure or fan amperage for the thermal oxidizer from the most recent valid stack test that demonstrates compliance with the limits set by Condition D.3.5(a) as approved by IDEM.

(b) The duct pressure or fan amperage, whichever is monitored by the Permittee under this condition shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

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

D.3.15 Record Keeping Requirements

(a) To document compliance with Conditions D.3.5 and D.3.6, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.3.5 and D.3.6. 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 (as applied) and the VOC content of each solvent (including purge solvents and thinners).

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material, wiping/cleaning solvent, purge solvents used on a monthly basis, and amount of purge material (paint solids + solvent) captured and recycled on a 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 wiping/cleaning solvents, and those used as purge.

(4) The volume weighted average VOC emitted per gallon of the coatings used (as applied) for each day.

(5) The continuous temperature records (on a three-hour average basis) for the fascia paint line curing oven thermal oxidizer and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(6) Records of any thermal oxidizer shutdowns due to duct pressure or fan amperage deviations.

(7) Records of the natural gas fuel usage from the combustion units associated with the fascia paint line (PFPLS#2), and from the 5 MMBtu/hr heat flash added to the existing Topcoat, Unit 003.

(8) Daily records of the duct pressure or fan amperage.

(b) To document compliance with Condition D.3.13, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All records shall be maintained and available upon a request for inspection by the IDEM, OAQ and shall be in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.16 Reporting Requirements

A monthly summary of the information to document compliance with Condition D.3.5 shall be submitted quarterly to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) ED Body Pretreatment area;

(2) One (1) ED Pretreatment Drying Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 5.55 MMBtu/hr;

(3) One (1) insignificant boiler for paint temperature control, with a heat input capacity of 4.0 MMBtu/hr;

(4) Two (2) insignificant pretreatment boilers for warming water surrounding the ED Body Coating Tank, each with a heat input capacity of 1.045 MMBtu/hr;

(5) One (1) ED Body Coating Tank, utilizing dipping as the method of application;

(6) One (1) ED Body Oven, with five (5) natural gas-fired burners totaling 13.7 MMBtu/hr, using a 1.5 MMBtu/hr natural gas-fired catalytic oxidizer (B-ED) as VOC control, and exhausting to one (1) stack, identified as B-ED Inc. (emissions from the entrance to, and exit from, the ED Body Oven use no controls and exhaust to one (1) stack, identified as B-ED Hood Exhaust); and

(7) One (1) ED Body Cool Down area.

(c) Topcoat System, identified as Unit 003, with a capacity of 60 units per hour, constructed in 1989, and modified in 2006 and 2008 consisting of the following units:

(1) One (1) Topcoat #1 Booth, utilizing electrostatic air atomized, electrostatic bell method of application, and robotic bells and automatic spray applicators, using a water wash as particulate matter control, and exhausting to nine (9) stacks, identified as TC1-1 through TC1-10. One (1) natural gas-fired dry off oven between the basecoat and clearcoat zones with a heat input capacity of 5 mmBtu/hr;

(2) One (1) Topcoat #1 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(3) One (1) Topcoat #1 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(4) One (1) Topcoat #1 Oven, with three (3) insignificant natural gas-fired burners, using a 3.0 MMBtu/hr natural gas-fired catalytic incinerator (TC-1) as VOC control, and exhausting to one (1) stack, identified as TC-1 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-1 Ex.);

(5) One (1) Topcoat #1 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-1 O.Cl.;

Facility Description [326 IAC 2-7-5(15)]: (continued)

(6) One (1) Topcoat #2 Booth, utilizing the electrostatic air atomized, electrostatic bell or similar method of application, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC2-1 through TC2-10. One (1) natural gas-fired dry off oven between the base coat and clear coat zones with a heat input capacity of 8 MMBtu/hr;

(7) One (1) Topcoat #2 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(8) One (1) Topcoat #2 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(9) One (1) Topcoat #2 Oven, with three (3) insignificant natural gas-fired burners, using a 1.5 MMBtu/hr natural gas-fired catalytic incinerator (TC-2) as VOC control, and exhausting to one (1) stack, identified as TC-2 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-2 Ex.);

(10) One (1) Topcoat #2 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-2 O.Cl.;

(11) One (1) Topcoat Booth #3, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to five (5) stacks, identified as TUT-1 through TUT-5;

(12) One (1) Topcoat Booth #3 Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 16.26 MMBtu/hr;

(13) One (1) Topcoat Booth #3 Reheat, with one (1) insignificant natural gas-fired burner;

(14) One (1) Topcoat Booth #3 Oven, with three (3) insignificant natural gas-fired burners, using a 2.5 MMBtu/hr natural gas-fired catalytic incinerator (TUT) as VOC control, and exhausting to one (1) stack, identified as TUT-O-1-2;

(15) One (1) Topcoat Booth #3 Cool Down area; and

(16) One (1) Wet Sand Repair Dryoff Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 1.49 MMBtu/hr.

(17) One (1) Topcoat Booth #3 natural gas-fired flash zone heater with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction

(d) Intermediate (Surfacer) Coating Line, identified as Unit 004, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) Intermediate Working Stage burner, with a heat input capacity of 19.74 MMBtu/hr;

(2) One (1) Intermediate Coating Booth, utilizing, two (2) additional robots (referred to as SGC and ACC robots, using a water wash as particulate matter control, and exhausting to six (6) stacks, identified as SUR-2 through SUR-7;

(3) One (1) Intermediate Booth Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 28.275 MMBtu/hr;

Facility Description [326 IAC 2-7-5(15)]: (continued)

(4) One (1) Intermediate Booth Reheat burner, with two (2) insignificant natural gas-fired burners;

(5) One (1) Intermediate Coating Oven, with five (5) insignificant natural gas-fired burners totaling 12.42 MMBtu/hr, using a 1.0 MMBtu/hr natural gas-fired catalytic incinerator (SUR) as VOC control, and exhausting to one (1) stack, identified as SUR-1 (emissions from the entrance to and exit from the Intermediate Coating Oven use no controls and exhaust to one (1) stack, identified as Surfacer Hood Exhaust); and

(6) One (1) Intermediate Cool Down area, using no controls, and exhausting to one (1) stack, identified as Surfacer Cooling.

(i) One (1) paint storage room for the ED Coating Line, identified as Unit 009, constructed in 1989.

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

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

D.4.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, PSD/SSM No. 157-29566-00050, 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following

(a) The daily VOC emissions from each facility shall not exceed the corresponding limits in the following table. Compliance with these limits shall be demonstrated pursuant to Condition D.4.9:

Facility	lb VOC/gal applied solids	kg VOC/liter applied solids
ED Body Coating Line (ED Dip/Rinse Tanks and Curing Oven)	0.40[a]	0.062
Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth)	12.3[b]	1.47[a]
Topcoat Booth #3	10.6[c]	1.27[c]
Intermediate Coating Booth	8.76[d]	1.05[b]

[a] Coatings used at the ED Coating Line on a daily basis
[b.] Volume Weighted average of all Topcoat coatings used in Booths #1 and #2.
[c.] Volume Weighted average of all Topcoat coatings used in Booth #3.
[d] Volume Weighted average of all Intermediate coatings.

(b) The incinerators used to control VOC emissions from the Topcoat #1 Booth, Topcoat #2 Booth, and Intermediate Coating Booth shall each achieve a minimum 20% capture efficiency and 90% destruction efficiency.

The VOC emissions from the Topcoat #3 Booth's Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent.

The VOC emissions from the ED Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent, and a minimum capture efficiency of 70% for the entire ED Coating Line (ED Dip/Rinse Tanks and Curing Oven).

(c) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(d) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.5.1, D.6.1, D.7.1, and D.8.1, shall satisfy the requirements of 326 IAC 2-2.

D.4.2 Prevention of Significant Deterioration - Best Available Control Technology for Nitrogen Oxides (NOx) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for NOx for the natural gas combustion equipment described in this section is the following:

(a) NOx emissions from the following facilities:

(1) Shall not exceed 0.10 pounds per million Btu heat input for each facility listed as follows:

(A) the Intermediate Working Stage burner;

(B) the three (3) Topcoat #1 Booth Preheat burners;

(C) the three (3) Topcoat #2 Booth Preheat burners;

(D) the two (2) Twotone and Repair Booth Preheat burners;

(E) the insignificant ED Pretreatment Drying Oven burner;

(F) the insignificant ED Paint Temperature Control boiler;

(G) the two (2) insignificant ED Pretreatment boilers;

(H) the five (5) insignificant ED Body Oven burner;

(I) the insignificant ED Body Oven incinerator;

(J) the five (5) insignificant Intermediate Oven burners;

(K) the three (3) insignificant Topcoat #1 Booth Reheat burners;

(L) the three (3) insignificant Topcoat #1 Oven burners;

(M) the three (3) insignificant Topcoat #2 Booth Reheat burner;

(N) the three (3) insignificant Topcoat #2 Oven burners;

(O) the insignificant Two tone Booth Reheat burner;

(P) the three (3) insignificant Two tone Oven burners; and

(Q) the insignificant Wet Sand Repair Dryoff Oven burner.

(2) Shall not exceed 0.12 pounds per million Btu heat input for each facility listed as follows:

(A) the two (2) Intermediate Booth Preheat burners;

(B) the two (2) insignificant Intermediate (Surfacer) Booth Reheat burner;

(C) the insignificant Intermediate (Surfacer) Oven incinerator;

(D) the insignificant Topcoat #1 Oven incinerator;

(E) the insignificant Topcoat #2 Oven incinerator; and

(F) the insignificant Two tone Oven incinerator.

(b) All combustion operations listed above shall use low-NOx natural gas burners.

Compliance with these limitations, and those contained in Conditions D.2.2, D.5.2, D.6.2, and D.8.2, shall satisfy the requirements of 326 IAC 2-2.

D.4.3 Particulate Emissions from Sources of Indirect Heating [326 IAC 6-2-4]

(a) Pursuant to 326 IAC 6-2-4, the particulate emissions from the one (1) insignificant 5.0-MMBtu/hr ED Chassis hot water boiler, the two (2) insignificant 1.045-MMBtu/hr ED Pretreatment boilers, and the one (1) insignificant 4.0-MMBtu/hr ED Paint Temperature Control boiler shall each not exceed 0.435 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr).

(b) Pursuant to 326 IAC 6-2-4, the particulate emissions from the 2.5 MMBtu/hour Topcoat #3 flash zone heater shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.4.4 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-2]

(a) Pursuant to 326 IAC 8-2-2, the Permittee shall not allow the discharge of VOC into the atmosphere in excess of the following limits:

(1) The daily VOC emissions from the Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth, and Topcoat #3 Booth) shall not exceed 15.3 pounds of VOC per gallon of applied solids (1.83 kilograms of VOC per liter of applied solids) (site-specific RACT

limit established pursuant to 325 IAC 8-1-5 (Petition for alternate controls)). This limit applies to the weighted average of all Topcoat coatings.

(2) The daily VOC emissions from the Intermediate Coating Booth shall not exceed 15.3 pounds of VOC per gallon of applied solids (1.83 kilograms of VOC per liter of applied solids) (site-specific RACT limit established pursuant to 325 IAC 8-1-5 (Petition for alternate controls)). This limit applies to the weighted average of all Intermediate coatings.

(b) Compliance with the VOC emission limits in paragraph (a) of this condition shall be determined with the following equation:

Pursuant to 326 IAC 8-1-2(c), the overall efficiency of the incinerators (TC-1, TC-2, TUT, and SUR) shall be no less than the equivalent overall efficiency calculated by the following equation:

$$O = \frac{V - (E * TE)}{V} * 100$$

Where:

V = The actual VOC content of the coating or, if multiple coatings are used, the daily weighted average VOC content of all coatings, as applied to the subject coating line as determined by the applicable test methods and procedures specified in 326 IAC 8-1-4 in units of pounds of VOC per gallon of coating solids as applied.
E = 326 IAC 8-2-2 emission limit in pounds of VOC per gallon of applied solids.
TE = The overall transfer efficiency of the applicator for all coatings applied in the subject coating line, expressed as a decimal.
O = Equivalent overall efficiency of the capture system and control device as a percentage.

(c) At this time, IDEM is collecting the coating information necessary to calculate the overall efficiency of the capture system and control device necessary to meet the limit above, pursuant to 326 IAC 8-1-2(c). Once this information is available, the OAQ will promptly reopen the permit using provisions of 326 IAC 2-7-9 (Permit Reopening) to include this information.

D.4.5 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-2] [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-2, the daily VOC emissions from the ED Body Coating Tank shall not exceed 1.17 pounds of VOC per gallon of coating less water (0.14 kilograms of VOC per liter of coating less water) (site-specific RACT limit established pursuant to 325 IAC 8-1-5 (Petition for alternate controls)).

Compliance with this limit shall be demonstrated pursuant to Condition D.4.9.

D.4.6 Prevention of Significant Deterioration (PSD) Minor Limit [326 IAC 2-2]

The annual VOC input, including cleanup solvents, to the modified Topcoat System, identified as Unit 003 shall be limited such that the VOC emissions do not exceed 393 tons per twelve (12) consecutive month period with compliance demonstrated at the end of each month.

Compliance with this VOC limit and the VOC limits in Conditions D.1.3 and D.3.5 shall render 326 IAC 2-2, Prevention of Significant Deterioration not applicable to the source modification permitted in SSM 157-22702-00050.

D.4.7 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate emissions from the Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth, and Topcoat #3 Booth) and the Intermediate Coating Booth shall be controlled by water washes and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

D.4.8 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

Compliance Determination Requirements

D.4.9 Volatile Organic Compounds (VOC) [326 IAC 8-1-2] [326 IAC 2-2]

(a) Compliance with the VOC emission limits in Conditions D.4.1 and D.4.5 shall be determined with the following equations (as applicable):

VOC emissions (lb VOC/gal applied solids) = [∑(C x U) / ∑(S x TE)] x [1 - CE x DE)]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating, as applied;
U is the usage rate of the coating in gallons per day;
S is the usage rate of coating solids in gallons per day;
TE is the transfer efficiency of the applicator;
CE is the minimum capture efficiency of the incinerator required in Condition D.4.1; and
DE is the minimum destruction efficiency of the incinerator required in Condition D.4.1.

Or, if the emission limit is in units of pounds of VOC per gallon of coating less water:

VOC emissions (lb VOC/gal coating less water) = [∑ (C x U) / ∑ U] x [(1 - (CE x DE))]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating less water, as applied;
U is the usage rate of the coating in gallons per day;
CE is the minimum capture efficiency of the incinerator required in Condition D.4.1; and
DE is the minimum destruction efficiency of the incinerator required in Condition D.4.1.

(b) Compliance with the VOC limit in Condition D.4.6 shall be determined by using the following equation, which calculates the tons of VOC emissions per month, and adding the result to the calculated VOC emissions from the previous eleven months:

Topcoat VOC = (U x C) x (1-(CE x DE))

Where:

U is the coating usage in tons/month
C is the VOC content of the coating
CE is the minimum capture efficiency of the incinerator
DE is the minimum destruction efficiency of the oxidizer required in D.4.1

(c) Compliance with Condition D.4.1(b) the capture efficiency for the ED Coating Line shall be determined using the procedure in 40 CFR Subpart MM – NSPS for Automobile and Light-Duty Truck Surface Coating Operations.

D.4.10 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

(a) Pursuant to 326 IAC 8-1-2(a), the Permittee shall operate the incinerators at all times the respective facilities are in operation to ensure compliance with Conditions D.4.1 and D.4.4.

(b) The incinerators shall be operated such that they achieve the minimum capture and destruction efficiencies specified in Condition D.4.1.

D.4.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within sixty (60) days after achieving maximum production rate but no later than one hundred and eighty (180) days after initial startup of the modified Topcoat System, the Permittee shall conduct a performance test to verify overall VOC control efficiency of the catalytic incinerator, TC-1 controlling Topcoat #1 Oven utilizing methods as approved by the Commissioner. The Permittee conducted a performance test in January 2006 to verify overall control of the catalytic oxidizer, TUT, controlling the Topcoat #3 Oven..

(b) The Permittee shall conduct a performance test to verify overall VOC control efficiency of the catalytic incinerator (B-ED) associated with the ED Coating Oven and the catalytic incinerator (TC-2), associated with the Topcoat Coat Booth #2 Oven, utilizing methods as approved by the Commissioner. Testing shall be performed in parallel with the testing scheduled to occur in 2009 on catalytic incinerators (TC-1, TUT and SUR).

The incinerators' overall control efficiency testing shall be repeated at least once every 2.5 years from the date of the most recent compliance demonstration.

D.4.12 Catalytic Incinerators Temperature [326 IAC 2-7-5(3)] [40 CFR 64]

(a) A continuous monitoring system shall be calibrated, maintained, and operated for measuring the temperature at the inlet to the catalyst bed of each catalytic incinerator used to control emissions from the ED Body Oven, Topcoat #1 Oven, Topcoat #2 Oven, Topcoat #3 Oven, and Intermediate Coating Oven. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a three (3) hour average. From the date of issuance of this permit until the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C –Response to Excursions or Exceedances whenever the three (3) hour average inlet temperature to the catalyst bed of each catalytic incinerator is below 650 ^{o}F or the three (3) hour average temperature established during the latest stack test, the Permittee shall take reasonable response. A three (3) hour average temperature that is below 650^{0}F is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit. Section C - Response to Excursions or Exceedances contains the Permittee’s obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

(b) The Permittee shall determine the three (3) hour average temperature at the inlet to the catalyst bed of each catalytic incinerator from the most recent valid performance test that demonstrates compliance with the limits in Conditions D.4.1, and D.4.4 as approved by IDEM.

(c) On and after the date the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C - Response to Excursions or Exceedances whenever the 3-hour average temperature at the inlet to the catalyst bed of each catalytic incinerator is below the three (3) hour average inlet temperature as observed during the compliant performance test. A three (3) hour average temperature that is below the three (3) hour average temperature as observed during the compliant performance test is not a deviation of this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.4.13 Parametric Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

(a) The Permittee shall determine the appropriate duct pressure or fan amperage for each catalytic incinerator (B-ED, TC-1, TC-2, TUT, and SUR) from the most recent valid stack test that demonstrates compliance with the permit limits on VOC destruction efficiency and control efficiency as approved by IDEM.

(b) The duct pressure or fan amperage whichever is monitored by the Permittee under this condition, shall be observed at least once per day when the thermal or catalytic incinerator is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

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

D.4.14 Operator Training Program

The Permittee shall implement an operator training program.

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the water wash control systems on the Topcoat #1, Topcoat #2, Topcoat #3, and Intermediate Coating lines. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper flow of water through the water pan of the water wash system, and other factors that affect water pan capture efficiency (e.g., debris in the water pans), and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available not later than 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

D.4.15 Water Wash Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

(a) Daily visual inspections shall be made on each water wash flood pans and water circulation associated with the Topcoat #1 Booth, exhausting to nine (9) stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth, exhausting to ten (10) stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth, exhausting to five (5) stacks, identified as TUT1 through TUT-5 to verify the control system proper operation. A warning system shall be installed and operated to ensure that the water circulation pump is operational at all times when any of the following emission units are in operation: Topcoat #1 Booth, Topcoat #2 Booth, and Topcoat #3 Booth. In addition, red strobe light shall automatically be activated whenever the water circulation pump is down and once a day visual observation of the warning system shall be conducted. When a system warning is received, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

(b) Semi-annual inspections shall be performed of the coating emissions from the Topcoat #1 Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5 and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions or when evidence of overspray emission is observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.4.16 Record Keeping Requirements

(a) To document the compliance status with Conditions D.4.1, D.4.4, D.4.5, and D.4.6, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.4.1, D.4.4, D.4.5, and D.4.6, and the compliance determination requirements established in Condition D.4.12. Records necessary to demonstrate the compliance status shall be available within not later than 30 days after the end of each compliance period.

(1) The VOC content of each coating material (as applied) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The VOC content of each coating material used in the ED Body Coating Tank, as applied, less water.

(3) The solids content of each coating material used (as applied).

(4) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(5) The volume weighted average VOC content of the coatings used (as applied) for each day.

(b) To document the compliance status with Conditions D.4.12 and D.4.13, the Permittee shall maintain the following records:

(1) The continuous temperature records (on a three-hour average basis) for each incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(2) Records of any catalytic incinerator shutdowns due to duct pressure or fan amperage deviations.

(3) The continuous inlet temperature to the catalyst bed of each catalytic incinerator.

(4) Daily records of the duct pressure or fan amperage.

(c) To document the compliance status with Condition D.4.14, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available not later than 1 hour after request for inspection by IDEM.

(d) To document the compliance status with Condition D.4.15, the Permittee shall maintain records of daily visual inspection of the water wash system, dates of any water wash warning system going off and corrective actions taken and log of semi-annual inspections of the Topcoat #1

Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5.

(e) Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

D.4.17 Reporting Requirements

A monthly report of the daily VOC content of the coatings used from the ED Coating Line, Topcoat #1 Booth, Topcoat #2 Booth, Topcoat Booth #3 and Intermediate Coating Booth and monthly summary of the information to document the compliance status with Conditions D.4.1 and D.4.6, shall be submitted not later than thirty (30) days after the end of the month being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(h) Final Repair (Touchup) painting, identified as Unit 007, with a capacity of 10 units per hour, constructed in 1989, and including the following equipment:

(1) One (1) Touchup IPC Booth, located in the In-Process Control area, utilizing the air atomization method of spraying;

(2) One (1) Touchup Trim Booth, located in the Trim area, utilizing the air atomization method of spraying, using a dry filter as particulate matter control; and

(3) One (1) insignificant Touchup Trim natural gas-fired burner.

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

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

D.5.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the Final Repair (Touchup) Operation is the following:

(a) The daily VOC emissions from the Final Repair booths (Touchup IPC Booth and Touchup Trim Booth) shall not exceed 4.84 pounds of VOC per gallon of coating less water (0.58 kilograms of VOC per liter of coating less water). This limit applies to the weighted average of all Final Repair coatings and solvents.

Compliance with this limit shall be demonstrated pursuant to Condition D.5.7.

(b) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(c) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.6.1, D.7.1, and D.8.1 shall satisfy the requirements of 326 IAC 2-2.

D.5.2 Prevention of Significant Deterioration - Best Available Control Technology for Nitrogen Oxides (NOx) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for NOx for the natural gas combustion equipment described in this section is the following:

(a) The NOx emissions from the Touchup Trim Booth burner shall not exceed 0.10 pounds per million Btu (lb/MMBtu) heat input; and

(b) All combustion facilities listed in this section shall use low-NOx natural gas burners.

Compliance with these limitations, and those contained in Conditions D.2.2, D.4.2, D.6.2, and D.8.2 shall satisfy the requirements of 326 IAC 2-2.

D.5.3 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-2]

Pursuant to 326 IAC 8-2-2, the daily VOC emissions from the Final Repair booths (Touchup IPC Booth and Touchup Trim Booth) shall not exceed 4.84 pounds of VOC per gallon of coating less water (0.58 kilograms of VOC per liter of coating less water). This limit applies to the weighted average of all Final Repair coatings and solvents.

Compliance with this limit shall be demonstrated pursuant to Condition D.5.7.

D.5.4 Particulate [326 IAC 6-3-2(d)]

The Touchup Trim Booth uses less than five (5) gallons of coating per day. The Permittee shall notify IDEM, OAQ of any changes in operation that could result in the Touchup Trim Booth using five (5) gallons or more of coating per day.

D.5.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

Compliance Determination Requirements

D.5.6 Particulate

Pursuant to PSD (79) 1651, issued on July 30, 1987, particulate emissions from the Touchup Trim Booth shall be controlled by a dry filter and the Permittee shall operate the control device in accordance with manufacturer’s specifications.

D.5.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Compliance with the VOC emission limits in Conditions D.5.1 and D.5.3 shall be determined with the following equation:

VOC emissions (lb VOC/gal coating less water) = [∑ (C x U) / ∑ U]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating less water, as applied;
U is the usage rate of the coating in gallons per day.

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

D.5.8 Operator Training Program

The Permittee shall implement an operator training program.

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the dry filter on the Touchup Trim coating operation. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper filter alignment, filter inspection and maintenance, and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

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

D.5.9 Record Keeping Requirements

(a) To document compliance with Conditions D.5.1 and D.5.3, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken as stated below and shall be complete and sufficient to establish compliance the VOC emission limits established in Conditions D.5.1 and D.5.3. 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 (as applied, less water) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(C) Records shall be sufficient to demonstrate that the Touchup Trim Booth uses less than five gallons of coating per day.

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

(b) To document compliance with Condition D.5.8, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

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

D.5.10 Reporting Requirements

To document compliance with Conditions D.5.1 and D.5.3, compliance reports shall be submitted on a calendar monthly basis within 21 days of the end of each month. The reports shall contain the following data for each operation on a monthly basis, based on actual daily coating usage:

(1) Average coating VOC content in kg VOC/liter coating minus water

(2) Coating usage in liters

When more than one coating has been averaged for compliance purposes, the average shall be determined on a weighted average by volume basis. All data necessary to verify weighted averages shall be included in the report.

SECTION D.6 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(b) Sealing and PVC Undercoating Line, identified as Unit 002, with a capacity of 60 units per hour, consisting of the following units:

(1) One (1) PVC Coating Booth #1, constructed in 1989, utilizing electrostatic application system and pedestal robotic spray system using a dry filter as particulate matter control, and exhausting to one (1) stack, identified as PVC-1-2;

(2) One (1) PVC Coating Booth #1 Preheat, constructed in 1989, with one (1) natural gas-fired burner with a heat input capacity of 16.8 MMBtu/hr;

(3) One (1) PVC Coating Booth #2, constructed in 1999, utilizing a pedestal robotic spray system, using a water wash as particulate matter control, and exhausting to one (1) stack, identified as PVC-Booth 2;

(4) One (1) PVC Coating Booth #2 Preheat, constructed in 1999, with one (1) natural gas-fired burner with a heat capacity of 16.8 MMBtu/hr;

(5) One (1) PVC Seal Oven, constructed in 1989, with two (2) insignificant natural gas-fired burners totaling 6.94 MMBtu/hr, using no controls, and exhausting to one (1) stack, identified as PVC-Oven Exhaust;

(6) One (1) PVC Cool Down area, constructed in 1989, using no controls, and exhausting to one (1) stack, identified as PVC Cooling; and

(7) One (1) Sound Deadener Operation approved in 2010 for construction, using no controls and exhausting to one (1) stack, identified as SD Stack.

(f) Anticorrosion Coating, identified as Unit 006, with a capacity of 60 units per hour, constructed in 1989, and including the following equipment:

(1) One (1) Black Coat and Wax Booth, utilizing the air-assisted method of spraying, using a dry filter as particulate matter control, exhausting to BCW Stack;

(2) One (1) Black and Wax Coat natural gas-fired burner, with a heat input capacity of 24.0 MMBtu/hr;

(3) One (1) Anticorrosion Coating Booth, utilizing the air-assisted method of spraying, using a water wash as particulate matter control, exhausting to Anticorrosion Stack; and

(4) One (1) insignificant Anticorrosion Coating natural gas-fired burner.

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

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

D.6.1 Volatile Organic Compounds (VOC) Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following:

(a) The daily VOC emissions from each facility in the Sealing and PVC Undercoating Line, identified as Unit 002 shall not exceed the corresponding limits in the following table. Compliance with these limits shall be demonstrated pursuant to Condition D.6.7:

Facility	lb VOC/gal applied coating solids	kg VOC/liter coating solids
Sealing and PVC Undercoating Line, identified as Unit 002 (PVC Coating Booths #1 and #2)	0.30 lb/gal applied coating solids (lb/gacs)	0.03

(b) The daily VOC emissions from the Black and Wax Booth and the Anticorrosion Coating Booth shall not exceed the corresponding limits in the following table. Compliance with these limits shall be determined pursuant to Condition D.6.7:

Facility	lb VOC/gal coating solids (lb/gcs)	kg VOC/liter coating solids
Black and Wax Booth (black phthalic resin application)	17.9	2.14
Black and Wax Booth (inner panel wax application)	6.43	0.77
Anticorrosion Coating Booth (underfloor wax application)	3.59	0.43

(c) The following spray application methods must be used whenever applying the following coatings:

(1) PVC Undercoat (in PVC Coating Booth #1) - Airless

(2) Underfloor Wax (in Anticorrosion Booth) - Airless

(3) Inner Panel Wax (in Black and Wax Booth) - Air or Airless with minimum transfer efficiency of 80%

(d) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(e) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.5.1, D.7.1, and D.8.1 shall satisfy the requirements of 326 IAC 2-2.

D.6.2 Prevention of Significant Deterioration - Best Available Control Technology for Nitrogen Oxides (NOx) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for NOx for the natural gas combustion facilities described in this section is the following:

(a) The NOx emissions from the PVC Coating Booth #1 Preheat Burner, the Black and Wax Coat Booth burner, the two (2) insignificant PVC Seal Oven burners, the two (2) insignificant natural gas-fired burners, and the insignificant Anticorrosion Booth burner shall not exceed 0.10 pounds per million Btu (lb/MMBtu) heat input each; and

(b) All combustion facilities listed in this section shall use low-NOx natural gas burners.

Compliance with these limitations, and those contained in Conditions D.2.2, D.4.2, D.5.2, and D.8.2 shall satisfy the requirements of 326 IAC 2-2.

D.6.3 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9, the Permittee shall not allow the discharge of VOC into the atmosphere in excess of the following limits:

(a) The daily VOC emissions from Sealing and PVC Coating (PVC Coating Booth #1, PVC Coating Booth #2 and Sound Deadener Operation) shall not exceed 3.5 pounds of VOC per gallon of coating less water (0.42 kilograms of VOC per liter of coating less water).

(b) The daily VOC emissions from Anticorrosion Coating (Black and Wax Booth and Anticorrosion Coating Booth) shall not exceed 3.0 pounds of VOC per gallon of coating less water (0.36 kilograms of VOC per liter of coating less water). This limit applies to the weighted average of all Anticorrosion coatings.

Compliance with these limits shall be demonstrated pursuant to Condition D.6.7.

D.6.4 Volatile Organic Compound (VOC) Limitations, Clean-up Requirements [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of the PVC Coating Booths, Black and Wax Booth, and Anticorrosion Coating Booth during cleanup or color changes shall be directed into containers. Said containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.

D.6.5 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate emissions from the Black and Wax Booth and PVC Coating Booth #1 shall be controlled by dry filters. Particulate emissions from the Anticorrosion Coating Booth and PVC Coating Booth #2 shall be controlled by water washes. The Permittee shall operate the control devices in accordance with manufacturer's specifications.

D.6.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

Compliance Determination Requirements

D.6.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Compliance with the VOC emission limits in Conditions D.6.1 and D.6.3 shall be determined with the following equations (as applicable):

VOC emissions (lb VOC/gal coating solids) = $[\sum (C \times U) / \sum U]$

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating solids as applied; and
U is the usage rate of the coating in gallons per day.

Or, if the emission limit is in units of pounds of VOC per gallon of coating less water:

VOC emissions (lb VOC/gal coating less water) = [∑ (C x U) / ∑ U]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating less water as applied;
U is the usage rate of the coating in gallons per day

Or, if the emission limit is in units of pounds of VOC per gallon of applied coating solids (lb/gacs)

$$DWA = \frac{\sum_{i=1}^{n} (C_i)(U_i)}{\sum_{i=1}^{n} (S_i \times TE)}$$

where:

DWA = daily calculated volume weighted average emissions in pounds per gallon coating solids.
C = VOC content of coating i, lb VOC/gal
U = actual coating i usage, gal/day
S = volume of solids in coating i consumed, gal/day
TE = transfer efficiency of the applicator, determine using the Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).
n = no. of coatings used during the day

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

D.6.8 Operator Training Program

The Permittee shall implement an operator training program.

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the dry filters on the PVC Booth #1 and Black Coat and Wax Coating operations, and of the water wash control systems on the PVC Booth #2 and Anticorrosion Coating operations. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper flow of water through the water pan of the water wash system, and other factors that affect water pan capture efficiency (e.g., debris in the water pans), and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

D.6.9 Dry Filters Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

Dry filters shall be operated whenever the PVC Coating Booth #1 and PVC Coating Booth #2, Black and Wax coating Booth and Anticorrosion Coating Booth are in operation and shall be maintained in accordance with manufacturer's specification. Filters shall be changed on a monthly basis. Magnahelic pressure gauges shall be installed for continuous pressure monitoring and to detect whether filters need to be changed more frequently due to abnormal overspray loading. When the gauges indicate that a problem exists for the dry filter, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

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

D.6.10 Record Keeping Requirements

(a) To document the compliance status with Conditions D.6.1 and D.6.3, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.6.1 and D.6.3. Records necessary to demonstrate compliance shall be available not later than 30 days after the end of each compliance period.

(1) The VOC content of each coating material (as applied, less water) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(4) The volume weighted average VOC content of the coatings used (as applied) for each day.

(b) To document the compliance status with Condition D.6.8, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available not later than 1 hour for inspection by IDEM.

(c) To document the compliance status with Condition D.6.9, the Permittee shall maintain log containing records of dry filter replacement, and any required corrective actions taken.

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

D.6.11 Reporting Requirements

A monthly report of the daily VOC content of the coatings used, based on a volume weighted average from the Sealing and Undercoating Line and Anticorrosion Coating Booth and the monthly summary of the information to document the compliance status with Condition D.6.1, shall be submitted not later than thirty (30) days after the end of the month being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.7 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(k) Trim Line, identified as Unit 010, application in the Body Shop and Trim Shop of adhesives and sealers to various vehicle parts, constructed in 1989.

(l) Three (3) storage tanks, identified collectively as Unit 011, and including the following equipment:

(1) Gasoline storage tank, with a capacity of 15,000 gallons, constructed in 1988, using a certified vapor collection and control system;

(2) Purge thinner storage tank, with a capacity of 5,000 gallons, constructed in 1988, using a certified vapor collection and control system; and

(3) Waste purge thinner storage tank, with a capacity of 6,000 gallons, constructed in 1992.

(m) Purge solvent recovery system, identified as Unit 012, with a maximum throughput of 168,000 gallons per year, constructed in 2001, and including the following equipment:

(1) Dirty purge Tank A, with a capacity of 1,096 gallons;

(2) Distillation overs Tank B, with a capacity of 1,096 gallons;

(3) Clean solvent Tank C, with a capacity of 1,096 gallons;

(4) Methanol Tank E, with a capacity of 1,096 gallons;

(5) Xylene Tank, with a capacity of 1,096 gallons;

(6) Acetone Tank, with a capacity of 1,096 gallons;

(7) Clean purge Tank OK, with a capacity of 1,949 gallons; and

(8) One (1) distillation unit.

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

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

D.7.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following:

(a) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee’s purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(b) The 15,000-gallon gasoline storage tank (one of three tanks identified as 011) shall be equipped with:

(1) a submerged fill pipe,

(2) pressure relief valve set to 0.7 psi or orifice of 0.5 inches in diameter, and

(3) a Stage I vapor balance system between the tank and transport.

Tank trucks shall not be unloaded unless they are properly equipped and connected to the vapor balance system and the system is in operation.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.5.1, D.6.1, and D.8.1, will satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1-6.

D.7.2 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3, the VOC BACT for the Trim Line, identified as Unit 010 shall be the following:

(a) The monthly volume weighted average of the VOC content of the adhesives and other materials used in the Trim Line, Unit 010 for window installation shall not exceed 0.40 pounds of VOC per gallon of coating, as applied.

(b) The monthly volume weighted average of the VOC content of the adhesives and sealers used in the Trim Line, Unit 010 excluding window installation materials shall not exceed 0.30 pounds of VOC per gallon of coating, as applied.

D.7.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

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

D.7.4 Record Keeping Requirements

(a) Pursuant to 326 IAC 12, the Permittee shall maintain records of the dimensions and an analysis showing the capacity of the 15,000-gallon gasoline storage tank. These records shall be maintained for the life of the source.

(b) To document the compliance status with Condition D.7.2, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limit established in Condition D.7.2. Records necessary to demonstrate the compliance status shall be available not later than 30 days of the end of each compliance period.

(1) The VOC content of each coating/adhesive (as applied).

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

(2) The volume weighted average VOC content of the coatings/adhesives used (as applied) for each month.

(3) The monthly coatings/adhesives usage in gallons.

(c) Section C - General Record Keeping Requirements, contains the Permittee’s obligations with regard to the records required by this condition.

.

D.7.5 Reporting Requirements

A quarterly report of the monthly volume weighted average of the VOC content of the adhesives used in the Trim Line, unit 010 for window installation, and all the other adhesives used and the quarterly summary of the information to document the compliance status with Condition D.7.2, shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.8 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

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

(a) Space heaters, process heaters, or boilers using the following fuels: Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour:

(1) Six (6) general hot water boilers with a combined heat input capacity of 23.08 MMBtu/hr. [326 IAC 2-2] [326 IAC 6-2-4]

(2) Other insignificant natural gas combustion units: [326 IAC 2-2]

(A) Stamping Shop Steam Cleaner

(B) Distillation Room Heater

(C) Makeup Air Units (7)

(D) Unit Heaters (50)

(E) Door Heaters (14)

(F) Air Handling Units (44)

(G) Heating and Ventilation Units (6)

(b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment: [326 IAC 2-2]

(1) One (1) Stamping Shop; and

(2) Two (2) body lines within one (1) Body Shop with MIG and resistance welding robots, and two grinding booths.

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

(d) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: [326 IAC 6-3-2]

(1) Grinding and machining operations occurring in the engine manufacturing facility; and

(2) Other deburring; buffing; polishing; abrasive blasting activities; pneumatic conveying; and woodworking operations.

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

Facility Description [326 IAC 2-7-5(15)]: (continued)

(e) Activities with emissions equal to or less than the following thresholds: 5 lb/hr or 25 lb/day PM; 5 lb/hr or 25 lb/day SO2; 5 lb/hr or 25 lb/day NOx; 3 lb/hr or 15 lb/day VOC; 1.0 ton/yr of a single HAP, or 2.5 ton/yr of any combination of HAPs:

(1) Gasoline Fill Operations (Benzene, Naphthalene, Ethylbenzene, Styrene, Toluene, Hexane, Xylene, Methyl Tert-butyl Ether) [326 IAC 2-2]

(2) The following storage tanks permitted under OP 79-09-93-0454, issued on July 26, 1989:

(A) One (1) double-walled fixed-roof engine oil storage tank, with a capacity of 10,000 gallons; and

(B) One (1) double-walled fixed-roof gear oil storage tank, with a capacity of 10,000 gallons;

(3) The following activities permitted under E 157-14535-00050, issued on October 10, 2001: assembly and testing (including engine test stands);

(4) Manual solvent wipedown.

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

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

D.8.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the insignificant vehicle gasoline fueling operation is the use of a Stage II vapor balance control system. This system shall be in operation whenever vehicles are being fueled.

Compliance with this limitation, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.5.1, D.6.1, and D.7.1, shall satisfy the requirements of 326 IAC 2-2.

D.8.2 Prevention of Significant Deterioration - Best Available Control Technology for Nitrogen Oxides (NOx) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for NOx for the insignificant natural gas combustion equipment described in this section is the following:

(a) The NOx emissions from the following insignificant natural gas combustion facilities shall not exceed 0.10 pounds per million Btu (lb/MMBtu) heat input each:

(1) Stamping Shop Steam Cleaner

(2) Hot Water Boilers (6)

(3) Makeup Air Units (7)

(4) Unit Heaters (33 - does not include 17 unit heaters in new engine manufacturing facility)

(5) Door Heaters (12 - does not include 2 door heaters in new engine manufacturing facility)

(6) Air Handling Units (38 - does not include 6 air handling units in new engine manufacturing facility)

(7) Heating and Ventilation Units (6)

(b) All combustion operations at the source shall use low-NOx natural gas burners.

Compliance with these limitations, and those contained in Conditions D.2.2, D.4.2, D.5.2, and D.6.2, shall satisfy the requirements of 326 IAC 2-2.

D.8.3 Particulate Matter from Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate matter emissions from the six (6) insignificant natural gas-fired general hot water boilers with a combined heat input capacity of 23.08 MMBtu/hr.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr).

D.8.4 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 and Exemption No. 157-14535-00050, issued on October 10, 2001, the allowable particulate emission rate from the insignificant metal machining of engine crankshaft in the engine manufacturing facility shall not exceed 1.03 pounds per hour when operating at a process weight rate of 0.128 tons per hour. This limit was calculated with the following equation:

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

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour.
= 14 kg/unit crankshaft * 6,000 units/mo
* 1 mo/30 days * 1 day/24 hr * 1 ton/907 kg
= 0.128 ton/hr

D.8.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the insignificant gasoline filling operation and its Stage II vapor balance control system.

SECTION E.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) ED Body Pretreatment area;

(2) One (1) ED Pretreatment Drying Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 5.55 MMBtu/hr;

(3) One (1) insignificant boiler for paint temperature control, with a heat input capacity of 4.0 MMBtu/hr;

(4) Two (2) insignificant pretreatment boilers for warming water surrounding the ED Body Coating Tank, each with a heat input capacity of 1.045 MMBtu/hr;

(5) One (1) ED Body Coating Tank, utilizing dipping as the method of application;

(6) One (1) ED Body Oven, with five (5) natural gas-fired burners totaling 13.7 MMBtu/hr, using a 1.5 MMBtu/hr natural gas-fired catalytic oxidizer (B-ED) as VOC control, and exhausting to one (1) stack, identified as B-ED Inc. (emissions from the entrance to, and exit from, the ED Body Oven use no controls and exhaust to one (1) stack, identified as B-ED Hood Exhaust); and

(7) One (1) ED Body Cool Down area.

(b) Sealing and PVC Undercoating Line, identified as Unit 002, with a capacity of 60 units per hour, consisting of the following units:

(1) One (1) PVC Coating Booth #1, constructed in 1989, utilizing electrostatic application system and pedestal robotic spray system, using a dry filter as particulate matter control, and exhausting to one (1) stack, identified as PVC-1-2;

(2) One (1) PVC Coating Booth #1 Preheat, constructed in 1989, with one (1) natural gas-fired burner with a heat input capacity of 16.8 MMBtu/hr;

(3) One (1) PVC Coating Booth #2, constructed in 1999, utilizing the airless spray method of application, using a water wash as particulate matter control, and exhausting to one (1) stack, identified as PVC-Booth 2;

(4) One (1) PVC Coating Booth #2 Preheat, constructed in 1999, with one (1) natural gas-fired burner with a heat capacity of 16.8 MMBtu/hr;

(5) One (1) PVC Seal Oven, constructed in 1989, with two (2) insignificant natural gas-fired burners totaling 6.94 MMBtu/hr, using no controls, and exhausting to one (1) stack, identified as PVC-Oven Exhaust;

(6) One (1) PVC Cool Down area, constructed in 1989, using no controls, and exhausting to one (1) stack, identified as PVC Cooling; and

(7) One (1) Sound Deadener Operation approved in 2010 for construction, using no controls and exhausting to one (1) stack, identified as SD Stack.

(c) Topcoat System, identified as Unit 003, with a capacity of 60 units per hour, constructed in 1989, and modified in 2006 and 2008 consisting of the following units:

Facility Description [326 IAC 2-7-5(15)]: (continued)

(1) One (1) Topcoat #1 Booth, utilizing electrostatic air atomized, electrostatic bell method of application, and robotic bells and automatic spray applicators, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC1-1 through TC1-10. One (1) natural gas-fired dry off oven, between the basecoat and clearcoat zones, with a heat input capacity of 5 MMBtu/hr.

(2) One (1) Topcoat #1 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(3) One (1) Topcoat #1 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(4) One (1) Topcoat #1 Oven, with three (3) insignificant natural gas-fired burners, using a 3.0 MMBtu/hr natural gas-fired catalytic incinerator (TC-1) as VOC control, and exhausting to one (1) stack, identified as TC-1 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-1 Ex.);

(5) One (1) Topcoat #1 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-1 O.Cl.;

(6) One (1) Topcoat #2 Booth, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC2-1 through TC2-10. One (1) natural gas-fired dry off oven between the base coat and clear coat zones with a heat input capacity of 8 MMBtu/hr;

(7) One (1) Topcoat #2 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(8) One (1) Topcoat #2 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(9) One (1) Topcoat #2 Oven, with three (3) insignificant natural gas-fired burners, using a 1.5 MMBtu/hr natural gas-fired catalytic incinerator (TC-2) as VOC control, and exhausting to one (1) stack, identified as TC-2 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-2 Ex.);

(10) One (1) Topcoat #2 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-2 O.Cl.;

(11) One (1) Topcoat Booth #3, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to five (5) stacks, identified as TUT-1 through TUT-5;

(12) One (1) Topcoat Booth #3 Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 16.26 MMBtu/hr;

(13) One (1) Topcoat Booth #3 Reheat, with one (1) insignificant natural gas-fired burner;

(14) One (1) Topcoat Booth #3 Oven, with three (3) insignificant natural gas-fired burners, using a 2.5 MMBtu/hr natural gas-fired catalytic incinerator (TUT) as VOC control, and exhausting to one (1) stack, identified as TUT-O-1-2;

(15) One (1) Topcoat Booth #3 Cool Down area; and

Facility Description [326 IAC 2-7-5(15)]: (continued)

(16) One (1) Wet Sand Repair Dryoff Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 1.49 MMBtu/hr.

(d) Intermediate (Surfacer) Coating Line, identified as Unit 004, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) Intermediate Working Stage burner, with a heat input capacity of 19.74 MMBtu/hr;

(2) One (1) Intermediate Coating Booth, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to six (6) stacks, identified as SUR-2 through SUR-7;

(3) One (1) Intermediate Booth Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 28.275 MMBtu/hr;

(4) One (1) Intermediate Booth Reheat burner, with two (2) insignificant natural gas-fired burners;

(5) One (1) Intermediate Coating Oven, with five (5) insignificant natural gas-fired burners totaling 12.42 MMBtu/hr, using a 1.0 MMBtu/hr natural gas-fired catalytic incinerator (SUR) as VOC control, and exhausting to one (1) stack, identified as SUR-1. (emissions from the entrance to and exit from the Intermediate Coating Oven use no controls and exhaust to one (1) stack, identified as Surfacer Hood Exhaust); and

(6) One (1) Intermediate Cool Down area, using no controls, and exhausting to one (1) stack, identified as Surfacer Cooling.

(e) Plastic Bumper Coating Line (PBL), identified as Unit 005, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) PBL Paint Booth, utilizing electrostatic application system, using a water wash as particulate matter control, and exhausting to three (3) stacks, identified as BPR-1, BPR-2, and BPR-JR;

(2) One (1) PBL Booth Preheat, with one (1) natural gas-fired burner with a heat input capacity of 17.10 MMBtu/hr;

(3) One (1) PBL Booth Reheat, with two (2) insignificant natural gas-fired burners;

(4) One (1) PBL Oven, using a 2.0 MMBtu/hr natural gas-fired thermal incinerator as VOC control, and exhausting to one (1) stack, identified as BPR Inc.; and

(5) One (1) PBL Cool Down area.

(f) Anticorrosion Coating, identified as Unit 006, with a capacity of 60 units per hour, constructed in 1989, and including the following equipment:

(1) One (1) Black Coat and Wax Booth, utilizing the air-assisted method of spraying, using a dry filter as particulate matter control, exhausting to BCW Stack;

(2) One (1) Black and Wax Coat natural gas-fired burner, with a heat input capacity of 24.0 MMBtu/hr;

Facility Description [326 IAC 2-7-5(15)]: (continued)

(3) One (1) Anticorrosion Coating Booth, utilizing the air-assisted method of spraying, using a water wash as particulate matter control, exhausting to Anticorrosion Stack; and

(4) One (1) insignificant Anticorrosion Coating natural gas-fired burner.

(g) One (1) plastic fascia paint line system (PFPLS#2), which will coat front and rear bumpers, and left and right side molding panels, with a maximum capacity of 150,118 units per year, consisting of the following units:

(1) One (1) primer spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(a).

(2) One (1) basecoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(b).

(3) One (1) clearcoat spray booth, utilizing robotic bells and automatic spray applicators with water wash system to control the particulate overspray emissions, and exhausting to one (1) stack, identified as PB2(c).

(4) Two (2) paint flash off areas for the primer zone and basecoat zone, exhausting to stack PB2(d), which includes natural gas-fired dry off ovens, with a total heat input capacity of 1.1 MMBtu/hr.

(5) Three (3) natural gas-fired air intake units, each with a heat input capacity of 3.1 million British thermal units per hour (MMBtu/hr).

(6) One (1) fascia paint line natural gas-fired curing oven, with a heat input capacity of 2.5 MMBtu/hr, controlled by a catalytic/thermal oxidizer with a heat input capacity of 1.1 MMBtu/hr, exhausting to one (1) stack, identified as PB2(g).

(7) One paint mix room.

(i) One (1) paint mixing room for the Plastic Bumper Coating Line, identified as Unit 008, constructed in 1989, using no controls, and exhausting to three (3) vents, identified as Mix-1, Mix-2, and Mix-3.

(j) One (1) paint storage room for the ED Coating Line, identified as Unit 009, constructed in 1989.

(k) Trim Line, identified as Unit 010, application in the Body Shop and Trim Shop of adhesives and sealers to various vehicle parts, constructed in 1989.

(l) Three (3) storage tanks, identified collectively as Unit 011, and including the following equipment:

(1) Gasoline storage tank, with a capacity of 15,000 gallons, constructed in 1988, using a certified vapor collection and control system;

(2) Purge thinner storage tank, with a capacity of 5,000 gallons, constructed in 1988, using a certified vapor collection and control system; and

(3) Waste purge thinner storage tank, with a capacity of 6,000 gallons, constructed in 1992.

Facility Description [326 IAC 2-7-5(15)]: (continued)

(m) Purge solvent recovery system, identified as Unit 012, with a maximum throughput of 168,000 gallons per year, constructed in 2001, and including the following equipment:

(1) Dirty purge Tank A, with a capacity of 1,096 gallons;

(2) Distillation overs Tank B, with a capacity of 1,096 gallons;

(3) Clean solvent Tank C, with a capacity of 1,096 gallons;

(4) Methanol Tank E, with a capacity of 1,096 gallons;

(5) Xylene Tank, with a capacity of 1,096 gallons;

(6) Acetone Tank, with a capacity of 1,096 gallons;

(7) Clean purge Tank OK, with a capacity of 1,949 gallons; and

(8) One (1) distillation unit.

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

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

Pursuant to 40 CFR 63.3101, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, as specified in Table 2 of 40 CFR Part 63, Subpart IIII in accordance with schedule in 40 CFR 63 Subpart IIII.

E.1.2 Automobiles and Light-Duty Trucks NESHAP [40 CFR Part 63, Subpart IIII]

The Permittee which engages in automobiles and light duty trucks production shall comply with the provisions of 40 CFR Part 63, Subpart IIII, as follows:

E.1.3 Surface Coating of Plastic Parts and Products NESHAP [40 CFR Part 63, Subpart PPPP]

The Permittee which engages in surface coating of plastic parts and products shall comply with the provisions of 40 CFR Part 63, Subpart IIII, in order to comply with 40 CFR Part 63, Subpart PPPP.

E.1.4 Surface Coating of Miscellaneous Metal Parts and Products NESHAP [40 CFR Part 63, Subpart MMMM]

The Permittee which engages in surface coating of miscellaneous metal parts and products shall comply with the provisions of 40 CFR Part 63, Subpart IIII, in order to demonstrate compliance with 40 CFR Part 63, Subpart MMMM.

What This Subpart Covers

§ 63.3080 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for facilities which surface coat new automobile or new light-duty truck bodies or body parts for new automobiles or new light-duty trucks. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

§ 63.3081 Am I subject to this subpart?

(a) Except as provided in paragraph (c) of this section, the source category to which this subpart applies is automobile and light-duty truck surface coating.

(b) You are subject to this subpart if you own or operate a new, reconstructed, or existing affected source, as defined in §63.3082, that is located at a facility which applies topcoat to new automobile or new light-duty truck bodies or body parts for new automobiles or new light-duty trucks, and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAP). A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year or any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.

(c) This subpart does not apply to surface coating, surface preparation, or cleaning activities that meet the criteria of paragraph (c)(1) or (2) of this section.

(1) Surface coating subject to any other NESHAP in this part as of June 25, 2004 except as provided in §63.3082(c).

(2) Surface coating that occurs during research or laboratory activities or that is part of janitorial, building, and facility maintenance operations, including maintenance spray booths used for painting production equipment, furniture, signage, etc., for use within the plant.

§ 63.3082 What parts of my plant does this subpart cover?

(a) This subpart applies to each new, reconstructed, and existing affected source.

(b) The affected source is the collection of all of the items listed in paragraphs (b)(1) through (4) of this section that are used for surface coating of new automobile or new light-duty truck bodies, or body parts for new automobiles or new light-duty trucks:

(1) All coating operations as defined in §63.3176.

(2) All storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed.

(3) All manual and automated equipment and containers used for conveying coatings, thinners, and cleaning materials.

(4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

(c) In addition, you may choose to include in your affected source, and thereby make subject to the requirements of this subpart, any coating operations, as defined in §63.3176, which would otherwise be subject to the NESHAP for surface coating of miscellaneous metal parts and products (subpart MMMM of this part) or surface coating of plastic parts and products (subpart PPPP of this part) which apply coatings to parts intended for use in new automobiles or new light-duty trucks or as aftermarket repair or replacement parts for automobiles or light-duty trucks.

(d) For all coating operations which you choose to add to your affected source pursuant to paragraph (c) of this section:

(1) All associated storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed; manual and automated equipment and containers used for conveying coatings, thinners, and cleaning materials; and storage containers and manual and automated equipment and containers used for conveying waste materials are also included in your affected source and are subject to the requirements of this subpart.

(2) All cleaning and purging of equipment associated with the added surface coating operations is subject to the requirements of this subpart.

(3) You must identify and describe all additions to the affected source made pursuant to paragraph (c) of this section in the initial notification required in §63.3110(b).

(e) An affected source is a new affected source if you commenced its construction after December 24, 2002, and the construction is of a completely new automobile and light-duty truck assembly plant where previously no automobile and light-duty truck assembly plant had existed, a completely new automobile and light-duty truck paint shop where previously no automobile and light-duty truck paint shop had existed, or a new automobile and light-duty truck topcoat operation where previously no automobile and light-duty truck topcoat operation had existed.

(f) An affected source is reconstructed if its paint shop undergoes replacement of components to such an extent that:

(1) The fixed capital cost of the new components exceeded 50 percent of the fixed capital cost that would be required to construct a new paint shop; and

(2) It was technologically and economically feasible for the reconstructed source to meet the relevant standards established by the Administrator pursuant to section 112 of the Clean Air Act (CAA).

(g) An affected source is existing if it is not new or reconstructed.

§ 63.3083 When do I have to comply with this subpart?

The date by which you must comply with this subpart is called the compliance date. The compliance date for each type of affected source is specified in paragraphs (a) through (c) of this section. The compliance date begins the initial compliance period during which you conduct the initial compliance demonstrations described in §§63.3150, 63.3160, and 63.3170.

(a) Intentionally omitted.

(b) For an existing affected source, the compliance date is April 26, 2007.

(c) Intentionally omitted.

(d) You must meet the notification requirements in §63.3110 according to the dates specified in that section and in subpart A of this part. Some of the notifications must be submitted before the compliance dates described in paragraphs (a) through (c) of this section.

Emission Limitations

§ 63.3090 Intentionally omitted.

§ 63.3091 What emission limits must I meet for an existing affected source?

(a) Except as provided in paragraph (b) of this section, you must limit combined organic HAP emissions to the atmosphere from electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) to no more than 0.072 kg/liter (0.60 lb/gal) of coating solids deposited during each month, determined according to the requirements in §63.3161.

(b) If you meet the operating limits of §63.3092(a) or (b), you must either meet the emission limits of paragraph (a) of this section or limit combined organic HAP emissions to the atmosphere from primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) to no more than 0.132 kg/liter (1.10 lb/gal) of coating solids deposited during each month, determined according to the requirements in §63.3171. If you do not have an electrodeposition primer system, you must limit combined organic HAP emissions to the atmosphere from primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) to no more than 0.132 kg/liter (1.10 lb/gal) of coating solids deposited during each month, determined according to the requirements in §63.3171.

(c) You must limit average organic HAP emissions from all adhesive and sealer materials other than materials used as components of glass bonding systems to no more than 0.010 kg/kg (lb/lb) of adhesive and sealer material used during each month.

(d) You must limit average organic HAP emissions from all deadener materials to no more than 0.010 kg/kg (lb/lb) of deadener material used during each month.

(e) For coatings and thinners used in coating operations added to the affected source pursuant to §63.3082(c):

(1) Adhesive and sealer materials that are not components of glass bonding systems are subject to and must be included in your demonstration of compliance for paragraph (c) of this section.

(2) Deadener materials are subject to and must be included in your demonstration of compliance for paragraph (d) of this section.

(3) All other coatings and thinners are subject to and must be included in your demonstration of compliance for paragraphs (a) or (b) of this section.

(f) If your facility has multiple paint lines (e.g., two or more totally distinct paint lines each serving a distinct assembly line, or a facility with two or more paint lines sharing the same paint kitchen or mix room), then for the operations addressed in paragraphs (a) and (b) of this section:

(1) You may choose to use a single grouping under paragraph (a) of this section for all of your electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations.

(2) You may choose to use a single grouping under paragraph (b) of this section for all of your primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations, as long as each of your electrodeposition primer systems meets the operating limits of §63.3092(a) or (b).

(3) You may choose to use one or more groupings under paragraph (a) of this section for the electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations from one or more of your paint lines; and one or more groupings under paragraph (b) of this section for the primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations from the remainder of your paint lines, as long as each electrodeposition primer system associated with each paint line you include in a grouping under paragraph (b) of this section meets the operating limits of §63.3092(a) or (b). For example, if your facility has three paint lines, you may choose to use one grouping under paragraph (a) of this section for two of the paint lines and a separate grouping under paragraph (b) of this section for the third paint line, as long as the electrodeposition primer system associated with the paint line you include in the grouping under paragraph (b) of this section meets the operating limits of §63.3092(a) or (b). Alternatively, you may choose to use one grouping for two of the paint lines and a separate grouping of the same type for the third paint line. Again, each

electrodeposition primer system associated with each paint line you include in a grouping under paragraph (b) of this section must meet the operating limits of §63.3092(a) or (b).

(4) You may choose to consider the electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations from each of your paint lines as a separate grouping under either paragraph (a) or paragraph (b) of this section. The electrodeposition primer system associated with each paint line you choose to consider in a grouping under paragraph (b) of this section must meet the operating limits of §63.3092(a) or (b). For example, if your facility has two paint lines, you may choose to use the grouping under paragraph (a) of this section for one paint line and the grouping under paragraph (b) of this section for the other paint line.

§ 63.3092 How must I control emissions from my electrodeposition primer system if I want to comply with the combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive emission limit?

If your electrodeposition primer system meets the requirements of either paragraph (a) or (b) of this section, you may choose to comply with the emission limits of §63.3090(b) or §63.3091(b) instead of the emission limits of §63.3090(a) or §63.3091(a).

(a) Each individual material added to the electrodeposition primer system contains no more than:

(1) 1.0 percent by weight of any organic HAP; and

(2) 0.10 percent by weight of any organic HAP which is an Occupational Safety and Health Administration (OSHA)-defined carcinogen as specified in 29 CFR 1910.1200(d)(4).

(b) Emissions from all bake ovens used to cure electrodeposition primers must be captured and ducted to a control device having a destruction or removal efficiency of at least 95 percent.

§ 63.3093 What operating limits must I meet?

(a) You are not required to meet any operating limits for any coating operation(s) without add-on controls.

(b) Except as provided in paragraph (d) of this section, for any controlled coating operation(s), you must meet the operating limits specified in Table 1 to this subpart. These operating limits apply to the emission capture and add-on control systems on the coating operation(s) for which you use this option, and you must establish the operating limits during the performance test according to the requirements in §63.3167. You must meet the operating limits at all times after you establish them.

(c) If you choose to meet the emission limitations of §63.3092(b) and the emission limits of §63.3090(b) or §63.3091(b), then except as provided in paragraph (d) of this section, you must operate the capture system and add-on control device used to capture and control emissions from your electrodeposition primer bake oven(s) so that they meet the operating limits specified in Table 1 to this subpart.

(d) If you use an add-on control device other than those listed in Table 1 to this subpart, or wish to monitor an alternative parameter and comply with a different operating limit, you must apply to the Administrator for approval of alternative monitoring under §63.8(f).

§ 63.3094 What work practice standards must I meet?

(a) [Reserved]

(b) You must develop and implement a work practice plan to minimize organic HAP emissions from the storage, mixing, and conveying of coatings, thinners, and cleaning materials used in, and waste materials generated by, all coating operations for which emission limits are established under §63.3090(a) through (d) or §63.3091(a) through (d). The plan must specify practices and procedures to ensure that, at a minimum, the elements specified in paragraphs (b)(1) through (5) of this section are implemented.

(1) All organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be stored in closed containers.

(2) The risk of spills of organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be minimized.

(3) Organic-HAP-containing coatings, thinners, cleaning materials, and waste materials must be conveyed from one location to another in closed containers or pipes.

(4) Mixing vessels, other than day tanks equipped with continuous agitation systems, which contain organic-HAP-containing coatings and other materials must be closed except when adding to, removing, or mixing the contents.

(5) Emissions of organic HAP must be minimized during cleaning of storage, mixing, and conveying equipment.

(c) You must develop and implement a work practice plan to minimize organic HAP emissions from cleaning and from purging of equipment associated with all coating operations for which emission limits are established under §63.3090(a) through (d) or §63.3091(a) through (d).

(1) The plan shall, at a minimum, address each of the operations listed in paragraphs (c)(1)(i) through (viii) of this section in which you use organic-HAP-containing materials or in which there is a potential for emission of organic HAP.

(i) The plan must address vehicle body wipe emissions through one or more of the techniques listed in paragraphs (c)(1)(i)(A) through (E) of this section, or an approved alternative.

(A) Use of solvent-moistened wipes.
(B) Keeping solvent containers closed when not in use.
(C) Keeping wipe disposal/recovery containers closed when not in use.
(D) Use of tack-wipes.
(E) Use of solvents containing less than 1 percent organic HAP by weight.

(ii) The plan must address coating line purging emissions through one or more of the techniques listed in paragraphs (c)(1)(ii)(A) through (D) of this section, or an approved alternative.

(A) Air/solvent push-out.
(B) Capture and reclaim or recovery of purge materials (excluding applicator nozzles/tips).
(C) Block painting to the maximum extent feasible.
(D) Use of low-HAP or no-HAP solvents for purge.

(iii) The plan must address emissions from flushing of coating systems through one or more of the techniques listed in paragraphs (c)(1)(iii)(A) through (D) of this section, or an approved alternative.

(A) Keeping solvent tanks closed.
(B) Recovering and recycling solvents.
(C) Keeping recovered/recycled solvent tanks closed.
(D) Use of low-HAP or no-HAP solvents.

(iv) The plan must address emissions from cleaning of spray booth grates through one or more of the techniques listed in paragraphs (c)(1)(iv)(A) through (E) of this section, or an approved alternative.

(A) Controlled burn-off.
(B) Rinsing with high-pressure water (in place).
(C) Rinsing with high-pressure water (off line).
(D) Use of spray-on masking or other type of liquid masking.
(E) Use of low-HAP or no-HAP content cleaners.

(v) The plan must address emissions from cleaning of spray booth walls through one or more of the techniques listed in paragraphs (c)(1)(v)(A) through (E) of this section, or an approved alternative.

(A) Use of masking materials (contact paper, plastic sheet, or other similar type of material).
(B) Use of spray-on masking.
(C) Use of rags and manual wipes instead of spray application when cleaning walls.
(D) Use of low-HAP or no-HAP content cleaners.

(E) Controlled access to cleaning solvents.

(vi) The plan must address emissions from cleaning of spray booth equipment through one or more of the techniques listed in paragraphs (c)(1)(vi)(A) through (E) of this section, or an approved alternative.

(A) Use of covers on equipment (disposable or reusable).
(B) Use of parts cleaners (off-line submersion cleaning).
(C) Use of spray-on masking or other protective coatings.
(D) Use of low-HAP or no-HAP content cleaners.
(E) Controlled access to cleaning solvents.

(vii) The plan must address emissions from cleaning of external spray booth areas through one or more of the techniques listed in paragraphs (c)(1)(vii)(A) through (F) of this section, or an approved alternative.

(A) Use of removable floor coverings (paper, foil, plastic, or similar type of material).
(B) Use of manual and/or mechanical scrubbers, rags, or wipes instead of spray application.
(C) Use of shoe cleaners to eliminate coating track-out from spray booths.
(D) Use of booties or shoe wraps.
(E) Use of low-HAP or no-HAP content cleaners.
(F) Controlled access to cleaning solvents.

(viii) The plan must address emissions from housekeeping measures not addressed in paragraphs (c)(1)(i) through (vii) of this section through one or more of the techniques listed in paragraphs (c)(1)(viii)(A) through (C) of this section, or an approved alternative.

(A) Keeping solvent-laden articles (cloths, paper, plastic, rags, wipes, and similar items) in covered containers when not in use.
(B) Storing new and used solvents in closed containers.
(C) Transferring of solvents in a manner to minimize the risk of spills.

(2) Notwithstanding the requirements of paragraphs (c)(1)(i) through (viii) of this section, if the type of coatings used in any facility with surface coating operations subject to the

requirements of this section are of such a nature that the need for one or more of the practices specified under paragraphs (c)(1)(i) through (viii) is eliminated, then the plan may include approved alternative or equivalent measures that are applicable or necessary during cleaning of storage, conveying, and application equipment.

(d) As provided in §63.6(g), we, the Environmental Protection Agency (EPA), may choose to grant you permission to use an alternative to the work practice standards in this section.

(e) The work practice plans developed in accordance with paragraphs (b) and (c) of this section are not required to be incorporated in your title V permit. Any revisions to the work practice plans developed in accordance with paragraphs (b) and (c) of this section do not constitute revisions to your title V permit.

(f) Copies of the current work practice plans developed in accordance with paragraphs (b) and (c) of this section, as well as plans developed within the preceding 5 years must be available on-site for inspection and copying by the permitting authority.

General Compliance Requirements

§ 63.3100 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations in §§63.3090 and 63.3091 at all times, as determined on a monthly basis.

(b) The coating operations must be in compliance with the operating limits for emission capture systems and add-on control devices required by §63.3093 at all times except during periods of startup, shutdown, and malfunction.

(c) You must be in compliance with the work practice standards in §63.3094 at all times.

(d) You must always operate and maintain your affected source including all air pollution control and monitoring equipment you use for purposes of complying with this subpart according to the provisions in §63.6(e)(1)(i).

(e) You must maintain a log detailing the operation and maintenance of the emission capture systems, add-on control devices, and continuous parameter monitoring systems (CPMS) during the period between the compliance date specified for your affected source in §63.3083 and the date when the initial emission capture system and add-on control device performance tests have been completed, as specified in §63.3160.

(f) If your affected source uses emission capture systems and add-on control devices, you must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3). The SSMP must address startup, shutdown, and corrective actions in the event of a malfunction of the emission capture system or the add-on control devices.

§ 63.3101 What parts of the General Provisions apply to me?

Table 2 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

Notifications, Reports, and Records

§ 63.3110 What notifications must I submit?

(a) General. You must submit the notifications in §§63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (e) and (h) that apply to you by the dates specified in those sections, except as provided in paragraphs (b) and (c) of this section.

(b) Initial notification. You must submit the Initial Notification required by §63.9(b) for a new or reconstructed affected source no later than 120 days after initial startup or 120 days after June 25, 2004, whichever is later. For an existing affected source, you must submit the Initial Notification no later than 1 year after April 26, 2004. Existing sources that have previously submitted notifications of applicability of this rule pursuant to §112(j) of the CAA are not required to submit an initial notification under §63.9(b) except to identify and describe all additions to the affected source made pursuant to §63.3082(c).

(c) Notification of compliance status. If you have an existing source, you must submit the Notification of Compliance Status required by §63.9(h) no later than 30 days following the end of the initial compliance period described in §63.3160. If you have a new source, you must submit the Notification of Compliance Status required by §63.9(h) no later than 60 days after the first day of the first full month following completion of all applicable performance tests. The Notification of Compliance Status must contain the information specified in paragraphs (c)(1) through (12) of this section and in §63.9(h).

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of the report and beginning and ending dates of the reporting period. The reporting period is the initial compliance period described in §63.3160 that applies to your affected source.

(4) Identification of the compliance option specified in §63.3090(a) or (b) or §63.3091(a) or (b) that you used for electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) in the affected source during the initial compliance period.

(5) Statement of whether or not the affected source achieved the emission limitations for the initial compliance period.

(6) If you had a deviation, include the information in paragraphs (c)(6)(i) and (ii) of this section.

(i) A description and statement of the cause of the deviation.

(ii) If you failed to meet any of the applicable emission limits in §63.3090 or §63.3091, include all the calculations you used to determine the applicable emission rate or applicable average organic HAP content for the emission limit(s) that you failed to meet. You do not need to submit information provided by the materials suppliers or manufacturers, or test reports.

(7) All data and calculations used to determine the monthly average mass of organic HAP emitted per volume of applied coating solids from:

(i) The combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) if you were eligible for and chose to comply with the emission limits of §63.3090(b) or §63.3091(b); or

(ii) The combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c).

(8) All data and calculations used to determine compliance with the separate limits for electrodeposition primer in §63.3092(a) or (b) if you were eligible for and chose to comply with the emission limits of §63.3090(b) or §63.3091(b).

(9) All data and calculations used to determine the monthly mass average HAP content of materials subject to the emission limits of §63.3090(c) or (d) or the emission limits of §63.3091(c) or (d).

(10) All data and calculations used to determine the transfer efficiency for primer-surfacer and topcoat coatings, and for all coatings, except for deadener and for adhesive and sealer that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c).

(11) You must include the information specified in paragraphs (c)(11)(i) through (iii) of this section.

(i) For each emission capture system, a summary of the data and copies of the calculations supporting the determination that the emission capture system is a permanent total enclosure (PTE) or a measurement of the emission capture system efficiency. Include a description of the procedure followed for measuring capture efficiency, summaries of any capture efficiency tests conducted, and any calculations supporting the capture efficiency determination. If you use the data quality objective (DQO) or lower confidence limit (LCL) approach, you must also include the statistical calculations to show you meet the DQO or LCL criteria in appendix A to subpart KK of this part. You do not need to submit complete test reports.

(ii) A summary of the results of each add-on control device performance test. You do not need to submit complete test reports unless requested.

(iii) A list of each emission capture system's and add-on control device's operating limits and a summary of the data used to calculate those limits.

(12) A statement of whether or not you developed and implemented the work practice plans required by §63.3094(b) and (c).

§ 63.3120 What reports must I submit?

(a) Semiannual compliance reports. You must submit semiannual compliance reports for each affected source according to the requirements of paragraphs (a)(1) through (9) of this section. The semiannual compliance reporting requirements may be satisfied by reports required under other parts of the CAA, as specified in paragraph (a)(2) of this section.

(1) Dates. Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must prepare and submit each semiannual compliance report according to the dates specified in paragraphs (a)(1)(i) through (iv) of this section.

(i) The first semiannual compliance report must cover the first semiannual reporting period which begins the day after the end of the initial compliance period described in §63.3160 that applies to your affected source and ends on June 30 or December 31, whichever occurs first following the end of the initial compliance period.

(ii) Each subsequent semiannual compliance report must cover the subsequent semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iii) Each semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(iv) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the date specified in paragraph (a)(1)(iii) of this section.

(2) Inclusion with title V report. If you have obtained a title V operating permit pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a semiannual compliance report pursuant to this section along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the semiannual compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice in this subpart, its submission shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a semiannual compliance report shall not otherwise affect any obligation you may have to report deviations from permit requirements to the permitting authority.

(3) General requirements. The semiannual compliance report must contain the information specified in paragraphs (a)(3)(i) through (iv) of this section, and the information specified in paragraphs (a)(4) through (9) and (c)(1) of this section that are applicable to your affected source.

(i) Company name and address.

(ii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(iii) Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31.

(iv) Identification of the compliance option specified in §63.3090(b) or §63.3091(b) that you used for electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) in the affected source during the initial compliance period.

(4) No deviations. If there were no deviations from the emission limitations, operating limits, or work practices in §§63.3090, 63.3091, 63.3092, 63.3093, and 63.3094 that apply to you, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period. If you used control devices to comply with the emission limits, and there were no periods during which the CPMS were out of control as specified in §63.8(c)(7), the semiannual compliance report must include a statement that there were no periods during which the CPMS were out of control during the reporting period.

(5) Deviations: adhesive, sealer, and deadener. If there was a deviation from the applicable emission limits in §63.3090(c) and (d) or §63.3091(c) and (d), the semiannual compliance report must contain the information in paragraphs (a)(5)(i) through (iv) of this section.

(i) The beginning and ending dates of each month during which the monthly average organic HAP content exceeded the applicable emission limit in §63.3090(c) and (d) or §63.3091(c) and (d).

(ii) The volume and organic HAP content of each material used that is subject to the applicable organic HAP content limit.

(iii) The calculation used to determine the average monthly organic HAP content for the month in which the deviation occurred.

(iv) The reason for the deviation.

(6) Deviations: combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer and glass bonding adhesive, or combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c). If there was a deviation from the applicable emission limits in §63.3090(a) or (b) or §63.3091(a) or (b), the semiannual compliance report must contain the information in paragraphs (a)(6)(i) through (xiv) of this section.

(i) The beginning and ending dates of each month during which the monthly organic HAP emission rate from combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) exceeded the applicable emission limit in §63.3090(a) or §63.3091(a); or the monthly organic HAP emission rate from combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) exceeded the applicable emission limit in §63.3090(b) or §63.3091(b).

(ii) The calculation used to determine the monthly organic HAP emission rate in accordance with §63.3161 or §63.3171. You do not need to submit the background data supporting these calculations, for example information provided by materials suppliers or manufacturers, or test reports.

(iii) The date and time that any malfunctions of the capture system or add-on control devices used to control emissions from these operations started and stopped.

(iv) A brief description of the CPMS.

(v) The date of the latest CPMS certification or audit.

(vi) The date and time that each CPMS was inoperative, except for zero (low-level) and high-level checks.

(vii) The date and time period that each CPMS was out of control, including the information in §63.8(c)(8).

(viii) The date and time period of each deviation from an operating limit in Table 1 to this subpart; date and time period of each bypass of an add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(ix) A summary of the total duration and the percent of the total source operating time of the deviations from each operating limit in Table 1 to this subpart and the bypass of each add-on control device during the semiannual reporting period.

(x) A breakdown of the total duration of the deviations from each operating limit in Table 1 to this subpart and bypasses of each add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(xi) A summary of the total duration and the percent of the total source operating time of the downtime for each CPMS during the semiannual reporting period.

(xii) A description of any changes in the CPMS, coating operation, emission capture system, or add-on control devices since the last semiannual reporting period.

(xiii) For each deviation from the work practice standards, a description of the deviation, the date and time period of the deviation, and the actions you took to correct the deviation.

(xiv) A statement of the cause of each deviation.

(7) Deviations: separate electrodeposition primer organic HAP content limit. If you used the separate electrodeposition primer organic HAP content limits in §63.3092(a), and there was a deviation from these limits, the semiannual compliance report must contain the information in paragraphs (a)(7)(i) through (iii) of this section.

(i) Identification of each material used that deviated from the emission limit, and the dates and time periods each was used.

(ii) The determination of mass fraction of each organic HAP for each material identified in paragraph (a)(7)(i) of this section. You do not need to submit background data supporting this calculation, for example, information provided by material suppliers or manufacturers, or test reports.

(iii) A statement of the cause of each deviation.

(8) Deviations: separate electrodeposition primer bake oven capture and control limitations. If you used the separate electrodeposition primer bake oven capture and control limitations in §63.3092(b), and there was a deviation from these limitations, the semiannual compliance report must contain the information in paragraphs (a)(8)(i) through (xii) of this section.

(i) The beginning and ending dates of each month during which there was a deviation from the separate electrodeposition primer bake oven capture and control limitations in §63.3092(b).

(ii) The date and time that any malfunctions of the capture systems or control devices used to control emissions from the electrodeposition primer bake oven started and stopped.

(iii) A brief description of the CPMS.

(iv) The date of the latest CPMS certification or audit.

(v) The date and time that each CPMS was inoperative, except for zero (low-level) and high-level checks.

(vi) The date, time, and duration that each CPMS was out of control, including the information in §63.8(c)(8).

(vii) The date and time period of each deviation from an operating limit in Table 1 to this subpart; date and time period of each bypass of an add-on control device; and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(viii) A summary of the total duration and the percent of the total source operating time of the deviations from each operating limit in Table 1 to this subpart and the bypasses of each add-on control device during the semiannual reporting period.

(ix) A breakdown of the total duration of the deviations from each operating limit in Table 1 to this subpart and bypasses of each add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(x) A summary of the total duration and the percent of the total source operating time of the downtime for each CPMS during the semiannual reporting period.

(xi) A description of any changes in the CPMS, coating operation, emission capture system, or add-on control devices since the last semiannual reporting period.

(xii) A statement of the cause of each deviation.

(9) Deviations: work practice plans. If there was a deviation from an applicable work practice plan developed in accordance with §63.3094(b) or (c), the semiannual compliance report must contain the information in paragraphs (a)(9)(i) through (iii) of this section.

(i) The time period during which each deviation occurred.

(ii) The nature of each deviation.

(iii) The corrective action(s) taken to bring the applicable work practices into compliance with the work practice plan.

(b) Performance test reports. If you use add-on control devices, you must submit reports of performance test results for emission capture systems and add-on control devices no later than 60 days after completing the tests as specified in §63.10(d)(2). You must submit reports of transfer efficiency tests no later than 60 days after completing the tests as specified in §63.10(d)(2).

(c) Startup, shutdown, and malfunction reports. If you used add-on control devices and you had a startup, shutdown, or malfunction during the semiannual reporting period, you must submit the reports specified in paragraphs (c)(1) and (2) of this section.

(1) If your actions were consistent with your SSMP, you must include the information specified in §63.10(d) in the semiannual compliance report required by paragraph (a) of this section.

(2) If your actions were not consistent with your SSMP, you must submit an immediate startup, shutdown, and malfunction report as described in paragraphs (c)(2)(i) and (ii) of this section.

(i) You must describe the actions taken during the event in a report delivered by facsimile, telephone, or other means to the Administrator within 2 working days after starting actions that are inconsistent with the plan.

(ii) You must submit a letter to the Administrator within 7 working days after the end of the event, unless you have made alternative arrangements with the Administrator as specified in §63.10(d)(5)(ii). The letter must contain the information specified in §63.10(d)(5)(ii).

§ 63.3130 What records must I keep?

You must collect and keep records of the data and information specified in this section. Failure to collect and keep these records is a deviation from the applicable standard.

(a) A copy of each notification and report that you submitted to comply with this subpart, and the documentation supporting each notification and report.

(b) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP, the density and the volume fraction of coating solids for each coating, the mass fraction of organic HAP and the density for each thinner, and the mass fraction of organic HAP for each cleaning material. If you conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, you must keep a copy of the complete test report. If you use information provided to you by the manufacturer or supplier of the material that was based on testing, you must keep the summary sheet of results provided to you by the manufacturer or supplier. If you use the results of an analysis conducted by an outside testing lab, you must keep a copy of the test report. You are not required to obtain the test report or other supporting documentation from the manufacturer or supplier.

(c) For each month, the records specified in paragraphs (c)(1) through (6) of this section.

(1) For each coating used for electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations and for each coating, except for deadener and for adhesive and sealer that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c), a record of the volume used in each month, the mass fraction organic HAP content, the density, and the volume fraction of solids.

(2) For each thinner used for electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations and for each thinner, except for thinner used for deadener and for adhesive and sealer that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c), a record of the volume used in each month, the mass fraction organic HAP content, and the density.

(3) For each deadener material and for each adhesive and sealer material, a record of the mass used in each month and the mass organic HAP content.

(4) A record of the calculation of the organic HAP emission rate for electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) for each month if subject to the emission limit of §63.3090(a) or §63.3091(a). This record must include all raw data, algorithms, and intermediate calculations. If the guidelines presented in the “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22), are used, you must keep records of all data input to this protocol. If these data are maintained as electronic files, the electronic files, as well as any paper copies must be maintained. These data must be provided to the permitting authority on request on paper, and in (if calculations are done electronically) electronic form.

(5) A record of the calculation of the organic HAP emission rate for primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) for each month if subject to the emission limit of §63.3090(b) or §63.3091(b), and a record of the weight fraction of each organic HAP in each material added to the electrodeposition primer system if subject to the limitations of §63.3092(a). This record must include all raw data, algorithms, and intermediate calculations. If the guidelines presented in the “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22), are used, you must keep records of all data input to this protocol. If these data are maintained as electronic files, the electronic files, as well as any paper copies must be maintained. These data must be provided to the permitting authority on request on paper, and in (if calculations are done electronically) electronic form.

(6) A record, for each month, of the calculation of the average monthly mass organic HAP content of:

(i) Sealers and adhesives; and
(ii) Deadeners.

(d) A record of the name and volume of each cleaning material used during each month.

(e) A record of the mass fraction of organic HAP for each cleaning material used during each month.

(f) A record of the density for each cleaning material used during each month.

(g) A record of the date, time, and duration of each deviation, and for each deviation, a record of whether the deviation occurred during a period of startup, shutdown, or malfunction.

(h) The records required by §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(i) For each capture system that is a PTE, the data and documentation you used to support a determination that the capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and has a capture efficiency of 100 percent, as specified in §63.3165(a).

(j) For each capture system that is not a PTE, the data and documentation you used to determine capture efficiency according to the requirements specified in §§63.3164 and 63.3165(b) through (g), including the records specified in paragraphs (j)(1) through (4) of this section that apply to you.

(1) Records for a liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure. Records of the mass of total volatile hydrocarbon (TVH), as measured by Method 204A or F of appendix M to 40 CFR part 51, for each material used in the coating operation, and the total TVH for all materials used during each capture efficiency test run, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, as measured by Method 204D or E of appendix M to 40 CFR Part 51, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR Part 51 for either a temporary total enclosure or a building enclosure.

(2) Records for a gas-to-gas protocol using a temporary total enclosure or a building enclosure. Records of the mass of TVH emissions captured by the emission capture system, as measured by Method 204B or C of appendix M to 40 CFR Part 51, at the inlet to the add-on control device, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, as measured by Method 204D or E of appendix M to 40 CFR Part 51, including a copy of the test report. Records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR Part 51 for either a temporary total enclosure or a building enclosure.

(3) Records for panel tests. Records needed to document a capture efficiency determination using a panel test as described in §63.3165(e) and (g), including a copy of the test report and calculations performed to convert the panel test results to percent capture efficiency values.

(4) Records for an alternative protocol. Records needed to document a capture efficiency determination using an alternative method or protocol, as specified in §63.3165(f), if applicable.

(k) The records specified in paragraphs (k)(1) and (2) of this section for each add-on control device organic HAP destruction or removal efficiency determination as specified in §63.3166.

(1) Records of each add-on control device performance test conducted according to §§63.3164 and 63.3166.\

(2) Records of the coating operation conditions during the add-on control device performance test showing that the performance test was conducted under representative operating conditions.

(l) Records of the data and calculations you used to establish the emission capture and add-on control device operating limits as specified in §63.3167 and to document compliance with the operating limits as specified in Table 1 to this subpart.

(m) Records of the data and calculations you used to determine the transfer efficiency for primer-surfacer and topcoat coatings and for all coatings, except for deadener and for adhesive and sealer that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c).

(n) A record of the work practice plans required by §63.3094(b) and (c) and documentation that you are implementing the plans on a continuous basis. Appropriate documentation may include operational and maintenance records, records of documented inspections, and records of internal audits.

(o) Records pertaining to the design and operation of control and monitoring systems must be maintained on-site for the life of the equipment in a location readily available to plant operators and inspectors.

§ 63.3131 In what form and for how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database.

(b) Except as provided in §63.3130(o), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record, as specified in §63.10(b)(1).

(c) Except as provided in §63.3130(o), you must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to §63.10(b)(1). You may keep the records off site for the remaining 3 years.

Compliance Requirements for Adhesive, Sealer, and Deadener

§ 63.3150 By what date must I conduct the initial compliance demonstration?

You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3151. The initial compliance period begins on the applicable compliance date specified in §63.3083 and ends on the last day of the month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next month. You must determine the mass average organic HAP content of the materials used each month for each group of materials for which an emission limitation is established in §63.3090(c) and (d) or §63.3091(c) and (d). The initial compliance demonstration includes the calculations according to §63.3151 and supporting documentation showing that during the initial compliance period, the mass average organic HAP content for each group of materials was equal to or less than the applicable emission limits in §63.3090(c) and (d) or §63.3091(c) and (d).

§ 63.3151 How do I demonstrate initial compliance with the emission limitations?

You must separately calculate the mass average organic HAP content of the materials used during the initial compliance period for each group of materials for which an emission limit is established in §63.3090(c) and (d) or §63.3091(c) and (d). If every individual material used within a group of materials meets the emission limit for that group of materials, you may demonstrate compliance with that emission limit by documenting the name and the organic HAP content of each material used during the initial compliance period. If any individual material used within a group of materials exceeds the emission limit for that group of materials, you must determine the mass average organic HAP content according to the procedures of paragraph (d) of this section.

(a) Determine the mass fraction of organic HAP for each material used. You must determine the mass fraction of organic HAP for each material used during the compliance period by using one of the options in paragraphs (a)(1) through (5) of this section.

(1) Method 311 (appendix A to 40 CFR Part 63). You may use Method 311 for determining the mass fraction of organic HAP. Use the procedures specified in paragraphs (a)(1)(i) and (ii) of this section when performing a Method 311 test.

(i) Count each organic HAP that is measured to be present at 0.1 percent by mass or more for OSHA-defined carcinogens, as specified in 29 CFR 1910.1200(d)(4), and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is measured to be 0.5 percent of the material by mass, you do not have to count it. Express the mass fraction of each organic HAP you count as a value truncated to four places after the decimal point (e.g., 0.3791).

(ii) Calculate the total mass fraction of organic HAP in the test material by adding up the individual organic HAP mass fractions and truncating the result to three places after the decimal point (e.g., 0.7638 truncates to 0.763).

(2) Method 24 (appendix A to 40 CFR Part 60). For coatings, you may use Method 24 to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for mass fraction of organic HAP.

(3) Alternative method. You may use an alternative test method for determining the mass fraction of organic HAP once the Administrator has approved it. You must follow the procedure in §63.7(f) to submit an alternative test method for approval.

(4) Information from the supplier or manufacturer of the material. You may rely on information other than that generated by the test methods specified in paragraphs (a)(1) through (3) of this section, such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens, as specified in 29 CFR 1910.1200(d)(4), and at 1.0 percent by mass or more for other compounds. For example, if toluene (not an OSHA carcinogen) is 0.5 percent of the material by mass, you do not have to count it. If there is a disagreement between such information and results of a test conducted according to paragraphs (a)(1) through (3) of this section, then the test method results will take precedence, unless after consultation, the facility demonstrates to the satisfaction of the enforcement authority that the facility's data are correct.

(5) Solvent blends. Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic HAP which must be counted toward the total organic HAP mass fraction of the materials. When neither test data nor manufacturer's data for solvent blends are available, you may use the default values for the mass fraction of organic HAP in the solvent blends listed in Table 3 or 4 to this subpart. If you use the tables, you must use the values in Table 3 for all solvent blends that match Table 3 entries, and you may only use Table 4 if the solvent blends in the materials you use do not match any of the solvent blends in Table 3 and you only know whether the blend is aliphatic or aromatic. However, if the results of a Method 311 test indicate higher values than those listed on Table 3 or 4 to this subpart, the Method 311 results will take precedence, unless after consultation, the facility demonstrates to the satisfaction of the enforcement authority that the data from Table 3 or 4 are correct.

(b) Determine the density of each material used. Determine the density of each material used during the compliance period from test results using ASTM Method D1475–98 (Reapproved 2003), “Standard Test Method for Density of Liquid Coatings, Inks, and Related Products” (incorporated by reference, see §63.14), or for powder coatings, test method A or test method B of ASTM Method D5965–02, “Standard Test Methods for Specific Gravity of Coating Powders,” (incorporated by reference, see §63.14), or information from the supplier or manufacturer of the material. If there is disagreement between ASTM Method D1475–98 (Reapproved 2003) test results or ASTM Method D5965–02, test method A or test method B test results and the supplier's or manufacturer's information, the test results will take precedence unless after consultation, the facility demonstrates to the satisfaction of the enforcement authority that the facility's data are correct.

(c) Determine the volume of each material used. Determine the volume (liters) of each material used during each month by measurement or usage records.

(d) Determine the mass average organic HAP content for each group of materials. Determine the mass average organic HAP content of the materials used during the initial compliance period for each group of materials for which an emission limit is established in §63.3090(c) and (d) or §63.3091(c) and (d), using Equations 1 and 2 of this section.

(1) Calculate the mass average organic HAP content of adhesive and sealer materials other than components of the glass bonding system used in the initial compliance period using Equation 1 of this section:

$$C_{avg,as} = \frac{\sum_{j=1}^{r} \left(Vol_{as,j}\right)\left(D_{as,j}\right)\left(W_{as,j}\right)}{\sum_{j=1}^{r} \left(Vol_{as,j}\right)\left(D_{as,j}\right)} \qquad (Eq.\ 1)$$

Where:
Cavg,as = Mass average organic HAP content of adhesives and sealer materials used, kg/kg.
Vol as,j = Volume of adhesive or sealer material, j, used, liters.
D as,j = Density of adhesive or sealer material, j, used, kg per liter.
W as,j = Mass fraction of organic HAP in adhesive or sealer material, j, kg/kg.
r = Number of adhesive and sealer materials used.

(2) Calculate the mass average organic HAP content of deadener materials used in the initial compliance period using Equation 2 of this section:

$$C_{avg,d} = \frac{\sum_{m=1}^{s} \left(Vol_{d,m}\right)\left(D_{d,m}\right)\left(W_{d,m}\right)}{\sum_{m=1}^{s} \left(Vol_{d,m}\right)\left(D_{d,m}\right)} \qquad (Eq.\ 2)$$

Where:
C avg,d = Mass average organic HAP content of deadener material used, kg/kg.
Vol d,m = Volume of deadener material, m, used, liters.
D d,m = Density of deadener material, m, used, kg per liter.
W d,m = Mass fraction of organic HAP in deadener material, m, kg/kg.
s = Number of deadener materials used.

(e) Compliance demonstration. The mass average organic HAP content for the compliance period must be less than or equal to the applicable emission limit in §63.3090(c) and (d) or §63.3091(c) and (d). You must keep all records as required by §§63.3130 and 63.3131. As part of the Notification of Compliance Status required by §63.3110, you must submit a statement that the coating operations were in compliance with the emission limitations during the initial compliance period because the mass average organic HAP content was less than or equal to the applicable emission limits in §63.3090(c) and (d) or §63.3091(c) and (d), determined according to this section.

§ 63.3152 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance, the mass average organic HAP content for each compliance period, determined according to §63.3151(a) through (d), must be less than or equal to the applicable emission limit in §63.3090(c) and (d) or §63.3091(c) and (d). A compliance period consists of 1 month. Each month after the end of the initial compliance period described in §63.3150 is a compliance period consisting of that month.

(b) If the mass average organic HAP emission content for any compliance period exceeds the applicable emission limit in §63.3090(c) and (d) or §63.3091(c) and (d), this is a deviation from the emission limitations for that compliance period and must be reported as specified in §§63.3110(c)(6) and 63.3120(a)(5).

(c) You must maintain records as specified in §§63.3130 and 63.3131.
Compliance Requirements for the Combined Electrodeposition Primer, Primer-Surfacer, Topcoat, Final Repair, Glass Bonding Primer, and Glass Bonding Adhesive Emission Limitations

Compliance Requirements for the Combined Electrodeposition Primer, Primer-Surfacer, Topcoat, Final Repair, Glass Bonding Primer, and Glass Bonding Adhesive Emission Limitations

§ 63.3160 By what date must I conduct performance tests and other initial compliance demonstrations?

(a) Intentionally omitted.

(b) Existing affected sources. For an existing affected source, you must meet the requirements of paragraphs (b)(1) through (3) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in §63.3083. You must conduct a performance test of each capture system and add-on control device according to the procedures in §§63.3164 through 63.3166 and establish the operating limits required by §63.3093 no later than the compliance date specified in §63.3083.

(2) You must develop and begin implementing the work practice plans required by §63.3094(b) and (c) no later than the compliance date specified in §63.3083.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of §63.3161. The initial compliance period begins on the applicable compliance date specified in §63.3083 and ends on the last day of the month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next month. You must determine the mass of organic HAP emissions and volume of coating solids deposited during the initial compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§63.3164 through 63.3166; supporting documentation showing that during the initial compliance period the organic HAP emission rate was equal to or less than the emission limits in §63.3091(a); the operating limits established during the performance tests and the results of the continuous parameter monitoring required by §63.3168; and documentation of whether you developed and implemented the work practice plans required by §63.3094(b) and (c).

(c) You are not required to conduct an initial performance test to determine capture efficiency or destruction efficiency of a capture system or control device if you receive approval to use the results of a performance test that has been previously conducted on that capture system (either a previous stack test or a previous panel test) or control device. You are not required to conduct an initial test to determine transfer efficiency if you receive approval to use the results of a test that has been previously conducted. Any such previous tests must meet the conditions described in paragraphs (c)(1) through (3) of this section.

(1) The previous test must have been conducted using the methods and conditions specified in this subpart.

(2) Either no process or equipment changes have been made since the previous test was performed or the owner or operator must be able to demonstrate that the results of the

performance test reliably demonstrate compliance despite process or equipment changes.

(3) Either the required operating parameters were established in the previous test or sufficient data were collected in the previous test to establish the required operating parameters.

§ 63.3161 How do I demonstrate initial compliance?

(a) You must meet all of the requirements of this section to demonstrate initial compliance. To demonstrate initial compliance, the organic HAP emissions from the combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) must meet the applicable emission limitation in §63.3090(a) or §63.3091(a).

(b) Compliance with operating limits. Except as provided in §63.3160(a)(4), you must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by §63.3093, using the procedures specified in §§63.3167 and 63.3168.

(c) Compliance with work practice requirements. You must develop, implement, and document your implementation of the work practice plans required by §63.3094(b) and (c) during the initial compliance period, as specified in §63.3130.

(d) Compliance with emission limits. You must follow the procedures in paragraphs (e) through (o) of this section to demonstrate compliance with the applicable emission limit in §63.3090(a) or §63.3091(a). You may also use the guidelines presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22) in making this demonstration.

(e) Determine the mass fraction of organic HAP, density and volume used. Follow the procedures specified in §63.3151(a) through (c) to determine the mass fraction of organic HAP and the density and volume of each coating and thinner used during each month.

(f) Determine the volume fraction of coating solids for each coating. You must determine the volume fraction of coating solids (liter of coating solids per liter of coating) for each coating used during the compliance period by a test or by information provided by the supplier or the manufacturer of the material, as specified in paragraphs (f)(1) and (2) of this section. If test results obtained according to paragraph (f)(1) of this section do not agree with the information obtained under paragraph (f)(2) of this section, the test results will take precedence unless after consultation, the facility demonstrates to the satisfaction of the enforcement authority that the facility's data are correct.

(1) ASTM Method D2697–86 (Reapproved 1998) or ASTM Method D6093–97 (Reapproved 2003). You may use ASTM Method D2697–86 (Reapproved 1998), “Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings” (incorporated by reference, see §63.14), or ASTM Method D6093–97 (Reapproved 2003), “Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer” (incorporated by reference, see §63.14), to determine the volume fraction of coating solids for each coating. Divide the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids.

(2) Information from the supplier or manufacturer of the material. You may obtain the volume fraction of coating solids for each coating from the supplier or manufacturer.

(g) Determine the transfer efficiency for each coating. You must determine the transfer efficiency for each primer-surfacer and topcoat coating, and for all coatings, except for deadener and for adhesive and sealer that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) using ASTM Method D5066–91 (Reapproved 2001), “Standard Test Method for Determination of the Transfer Efficiency Under Production Conditions for Spray Application of Automotive Paints-Weight Basis” (incorporated by reference, see §63.14), or the guidelines presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). You may conduct transfer efficiency testing on representative coatings and for representative spray booths as described in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). You may assume 100 percent transfer efficiency for electrodeposition primer coatings, glass bonding primers, and glass bonding adhesives. For final repair coatings, you may assume 40 percent transfer efficiency for air atomized spray and 55 percent transfer efficiency for electrostatic spray and high volume, low pressure spray.

(h) Calculate the total mass of organic HAP emissions before add-on controls. Calculate the total mass of organic HAP emissions before consideration of add-on controls from all coatings and thinners used during each month in the combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) using Equation 1 of this section:

$$H_{BC} = A + B \qquad (Eq.\ 1)$$

Where:
HBC = Total mass of organic HAP emissions before consideration of add-on controls during the month, kg.
A = Total mass of organic HAP in the coatings used during the month, kg, as calculated in Equation 1A of this section.
B = Total mass of organic HAP in the thinners used during the month, kg, as calculated in Equation 1B of this section.

(1) Calculate the kg organic HAP in the coatings used during the month using Equation 1A of this section:

$$A = \sum_{i=1}^{m} \left(Vol_{c,i}\right)\left(D_{c,i}\right)\left(W_{c,i}\right) \qquad (Eq.\ 1A)$$

Where:
A = Total mass of organic HAP in the coatings used during the month, kg.
Volc,i = Total volume of coating, i, used during the month, liters.
Dc,i = Density of coating, i, kg coating per liter coating.
Wc,i = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.
m = Number of different coatings used during the month.

(2) Calculate the kg of organic HAP in the thinners used during the month using Equation 1B of this section:

$$B = \sum_{j=1}^{n} \left(Vol_{t,j}\right)\left(D_{t,j}\right)\left(W_{t,j}\right) \qquad (Eq.\ 1B)$$

Where:
B = Total mass of organic HAP in the thinners used during the month, kg.
Volt,j = Total volume of thinner, j, used during the month, liters.
Dt,j = Density of thinner, j, kg per liter.
Wt,j = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg thinner.
n = Number of different thinners used during the month.

(i) Calculate the organic HAP emission reduction for each controlled coating operation. Determine the mass of organic HAP emissions reduced for each controlled coating operation during each month. The emission reduction determination quantifies the total organic HAP emissions captured by the emission capture system and destroyed or removed by the add-on control device. Use the procedures in paragraph (j) of this section to calculate the mass of organic HAP emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances. For each controlled coating operation using a solvent recovery system for which you conduct a liquid-liquid material balance, use the procedures in paragraph (k) of this section to calculate the organic HAP emission reduction.

(j) Calculate the organic HAP emission reduction for each controlled coating operation not using liquid-liquid material balances. For each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances, calculate the mass of organic HAP emission reduction for the controlled coating operation, excluding all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred, during the month using Equation 2 of this section. The calculation of mass of organic HAP emission reduction for the controlled coating operation during the month applies the emission capture system efficiency and add-on control device efficiency to the mass of organic HAP contained in the coatings and thinners that are used in the coating operation served by the emission capture system and add-on control device during each month. Except as provided in paragraph (p) of this section, for any period of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement of the capture system or control device serving the controlled coating operation occurred, you must assume zero efficiency for the emission capture system and add-on control device. Equation 2 of this section treats the materials used during such a deviation as if they were used on an uncontrolled coating operation for the time period of the deviation.

$$H_{Cn} = \left(A_C + B_C - A_{unc} - B_{unc}\right)\left(\frac{CE}{100} \times \frac{DRE}{100}\right) \qquad (Eq.\ 2)$$

Where:
HCn = Mass of organic HAP emission reduction, excluding all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred, for the controlled coating operation during the month, kg.
AC = Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg, as calculated in Equation 2A of this section.
BC = Total mass of organic HAP in the thinners used in the controlled coating operation during the month, kg, as calculated in Equation 2B of this section.
Aunc = Total mass of organic HAP in the coatings used during all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred for the controlled coating operation during the month, kg, as calculated in Equation 2C of this section.
Bunc = Total mass of organic HAP in the thinners used during all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an

operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred for the controlled coating operation during the month, kg, as calculated in Equation 2D of this section.
CE = Capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures specified in §§63.3164 and 63.3165 to measure and record capture efficiency.
DRE = Organic HAP destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in §§63.3164 and 63.3166 to measure and record the organic HAP destruction or removal efficiency.

(1) Calculate the mass of organic HAP in the coatings used in the controlled coating operation, kg, using Equation 2A of this section.

$$A_c = \sum_{i=1}^{m} (Vol_{c,i})(D_{c,i})(W_{c,i}) \qquad (Eq.\ 2A)$$

Where:
AC = Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg.
Volc,i = Total volume of coating, i, used during the month, liters.
Dc,i = Density of coating, i, kg per liter.
Wc,i = Mass fraction of organic HAP in coating, i, kg per kg.
m = Number of different coatings used.

(2) Calculate the mass of organic HAP in the thinners used in the controlled coating operation, kg, using Equation 2B of this section.

$$B_c = \sum_{j=1}^{n} (Vol_{t,j})(D_{t,j})(W_{t,j}) \qquad (Eq.\ 2B)$$

Where:
BC = Total mass of organic HAP in the thinners used in the controlled coating operation during the month, kg.
Volt,j = Total volume of thinner, j, used during the month, liters.
Dt,j = Density of thinner, j, kg per liter.
Wt,j = Mass fraction of organic HAP in thinner, j, kg per kg.
n = Number of different thinners used.

(3) Calculate the mass of organic HAP in the coatings used in the controlled coating operation during deviations specified in §63.3163(c) and (d), using Equation 2C of this section:

$$A_{unc} = \sum_{i=1}^{m} (VOLD_i)(D_i)(W_i) \qquad (Eq.\ 2C)$$

Where:
Aunc = Total mass of organic HAP in the coatings used during all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred for the controlled coating operation during the month, kg.
VOLDi = Total volume of coating, i, used in the controlled coating operation during deviations, liters.
Di = Density of coating, i, kg per liter.
Wi = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.

m = Number of different coatings.

(4) Calculate the mass of organic HAP in the thinners used in the controlled coating operation during deviations specified in §63.3163(c) and (d), using Equation 2D of this section:

$$B_{unc} = \sum_{j=1}^{n} (VOLD_j)(D_j)(W_j) \qquad (Eq.\ 2D)$$

Where:
Bunc = Total mass of organic HAP in the thinners used during all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating operation occurred for the controlled coating operation during the month, kg.
VOLDj = Total volume of thinner, j, used in the controlled coating operation during deviations, liters.
Dj = Density of thinner, j, kg per liter.
Wh = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg coating.
n = Number of different thinners.

(k) Intentionally omitted.

(l) Calculate the total volume of coating solids deposited. Determine the total volume of coating solids deposited, liters, in the combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) using Equation 5 of this section:

$$V_{sdep} = \sum_{i=1}^{m} (Vol_{c,i})(V_{s,i})(TE_{c,i}) \qquad (Eq.\ 5)$$

Where:
Vsdep = Total volume of coating solids deposited during the month, liters.
Volc,i = Total volume of coating, i, used during the month, liters.
Vs,i = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined according to §63.3161(f).
TEc,i = Transfer efficiency of coating, i, determined according to §63.3161(g), expressed as a decimal, for example 60 percent must be expressed as 0.60.
m = Number of coatings used during the month.

(m) Calculate the mass of organic HAP emissions for each month. Determine the mass of organic HAP emissions, kg, during each month, using Equation 6 of this section.

$$H_{HAP} = H_{BC} - \sum_{i=1}^{q} (H_{Cn,i}) - \sum_{j=1}^{r} (H_{CSR,j}) - \sum_{k=1}^{q} \sum_{m=1}^{Sk} (H_{DEV,k,m}) \qquad (Eq.\ 6)$$

Where:
HHAP = Total mass of organic HAP emissions for the month, kg.
HBC = Total mass of organic HAP emissions before add-on controls from all the coatings and thinners used during the month, kg, determined according to paragraph (h) of this section.
HCn,i = Total mass of organic HAP emission reduction for controlled coating operation, i, not using a liquid-liquid material balance, excluding all periods of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or control device serving the controlled coating

operation occurred, for the controlled coating operation during the month, from Equation 2 of this section.
$H_{CSR,j}$ = Total mass of organic HAP emission reduction for coating operation, j, controlled by a solvent recovery system using a liquid-liquid material balance, during the month, kg, from Equation 4 of this section.
$H_{DEV,k,m}$ = Mass of organic HAP emission reduction, based on the capture system and control device efficiency approved under paragraph (p) of this section for period of deviation, m, for controlled coating operation, k, kg, as determined using Equation 8 of this section.
q = Number of controlled coating operations not using a liquid-liquid material balance.
r = Number of coating operations controlled by a solvent recovery system using a liquid-liquid material balance.
S_k = Number of periods of deviation in the month for which non-zero capture and control device efficiencies have been approved for controlled coating operation, k.

(n) Calculate the organic HAP emission rate for the month. Determine the organic HAP emission rate for the month, kg organic HAP per liter coating solids deposited, using Equation 7 of this section:

$$H_{rate} = \left(H_{HAP}\right)/\left(V_{sdep}\right) \qquad (Eq.\ 7)$$

Where:
H_{rate} = Organic HAP emission rate for the month compliance period, kg organic HAP per liter coating solids deposited.
H_{HAP} = Mass of organic HAP emissions for the month, kg, determined according to Equation 6 of this section.
V_{sdep} = Total volume of coating solids deposited during the month, liters, from Equation 5 of this section.

(o) Compliance demonstration. To demonstrate initial compliance, the organic HAP emissions from the combined electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) must be less than or equal to the applicable emission limitation in §63.3090(a) or §63.3091(a). You must keep all records as required by §§63.3130 and 63.3131. As part of the Notification of Compliance Status required by §63.3110, you must submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in §63.3090(a) or §63.3091(a) and you achieved the operating limits required by §63.3093 and the work practice standards required by §63.3094.

(p) You may request approval from the Administrator to use non-zero capture efficiencies and add-on control device efficiencies for any period of time in which a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or add-on control device serving a controlled coating operation occurred.

(1) If you have manually collected parameter data indicating that a capture system or add-on control device was operating normally during a CPMS malfunction, a CPMS out-of-control period, or associated repair, then these data may be used to support and document your request to use the normal capture efficiency or add-on control device efficiency for that period of deviation.

(2) If you have data indicating the actual performance of a capture system or add-on control device (e.g., capture efficiency measured at a reduced flow rate or add-on control device efficiency measured at a reduced thermal oxidizer temperature) during a deviation, including a deviation during a period of startup, shutdown, or malfunction, from an

operating limit or from any CPMS requirement for the capture system or add-on control device serving a controlled coating operation, then these data may be used to support and document your request to use these values for that period of deviation.

(3) The organic HAP emission reduction achieved during each period of deviation, including a deviation during a period of startup, shutdown, or malfunction, from an operating limit or from any CPMS requirement for the capture system or add-on control device serving a controlled coating operation for which the Administrator has approved the use of non-zero capture efficiency and add-on control device efficiency values is calculated using Equation 8 of this section.

$$H_{DEV} = \left(A_{DEV} + B_{DEV}\right)\left(\frac{CE_{DEV}}{100}\right)\left(\frac{DRE_{DEV}}{100}\right) \qquad (Eq.\ 8)$$

Where:
HDEV = Mass of organic HAP emission reduction achieved during a period of deviation for the controlled coating operation, kg.
ADEV = Total mass of organic HAP in the coatings used in the controlled coating operation during the period of deviation, kg, as calculated in Equation 8A of this section.
BDEV = Total mass of organic HAP in the thinners used in the controlled coating operation during the period of deviation, kg, as calculated in Equation 8B of this section.
CEDEV = Capture efficiency of the emission capture system vented to the add-on control device, approved for the period of deviation, percent.
DREDEV = Organic HAP destruction or removal efficiency of the add-on control device approved for the period of deviation, percent.

(4) Calculate the total mass of organic HAP in the coatings used in the controlled coating operation during the period of deviation using equation 8A of this section:

$$A_{DEV} = \sum_{i=i}^{m}\left(VOL_{CDEV,i}\right)\left(D_{c,i}\right)\left(W_{c,i}\right) \qquad (Eq.\ 8A)$$

Where:
ADEV = Total mass of organic HAP in the coatings used in the controlled coating operation during the period of deviation, kg.
VOLCDEV,i = total volume of coating, i, used in the controlled coating operation during the period of deviation, liters.
Dc,i = Density of coating, i, kg per liter.
Wc,i = Mass fraction of organic HAP in coating, i, kg per kg.
m = Number of different coatings used.

(5) Calculate the total mass of organic HAP in the thinners used in the controlled coating operation during the period of deviation using equation 8B of this section:

$$BDEV = \sum_{j=i}^{n}\left(VOL_{TDEV,j}\right)\left(D_{t,j}\right)\left(W_{t,j}\right) \qquad (Eq.\ 8B)$$

Where:
BDEV = Total mass of organic HAP in the thinners used in the controlled coating operation during the period of deviation, kg.
VOLTDEV,j = Total volume of thinner, j, used in the controlled coating operation during the period of deviation, liters.
Dt,j = Density of thinner, j, kg per liter.
Wt,j = Mass fraction of organic HAP in thinner, j, kg per kg.
n = Number of different thinners used.

§ 63.3162 [Reserved]

§ 63.3163 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance with the applicable emission limit in §63.3090(a) or §63.3091(a), the organic HAP emission rate for each compliance period, determined according to the procedures in §63.3161, must be equal to or less than the applicable emission limit in §63.3090(a) or §63.3091(a). A compliance period consists of 1 month. Each month after the end of the initial compliance period described in §63.3160 is a compliance period consisting of that month. You must perform the calculations in §63.3161 on a monthly basis.

(b) If the organic HAP emission rate for any 1 month compliance period exceeded the applicable emission limit in §63.3090(a) or §63.3091(a), this is a deviation from the emission limitation for that compliance period and must be reported as specified in §§63.3110(c)(6) and 63.3120(a)(6).

(c) You must demonstrate continuous compliance with each operating limit required by §63.3093 that applies to you, as specified in Table 1 to this subpart.

(1) If an operating parameter is out of the allowed range specified in Table 1 to this subpart, this is a deviation from the operating limit that must be reported as specified in §§63.3110(c)(6) and 63.3120(a)(6).

(2) If an operating parameter deviates from the operating limit specified in Table 1 to this subpart, then you must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation except as provided in §63.3161(p).

(d) You must meet the requirements for bypass lines in §63.3168(b) for control devices other than solvent recovery systems for which you conduct liquid-liquid material balances. If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as specified in §63.3110(c)(6) and 63.3120(a)(6). For the purposes of completing the compliance calculations specified in §63.3161(k), you must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation.

(e) You must demonstrate continuous compliance with the work practice standards in §63.3094. If you did not develop a work practice plan, if you did not implement the plan, or if you did not keep the records required by §63.3130(n), this is a deviation from the work practice standards that must be reported as specified in §§63.3110(c)(6) and 63.3120(a)(6).

(f) If there were no deviations from the emission limitations, submit a statement as part of the semiannual compliance report that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in §63.3090(a) or §63.3091(a), and you achieved the operating limits required by §63.3093 and the work practice standards required by §63.3094 during each compliance period.

(g) During periods of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency, you must operate in accordance with the SSMP required by §63.3100(f).

(h) Consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction of the emission capture system, add-on control device, or coating operation that may affect emission capture or control device efficiency are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the SSMP. The Administrator will determine whether deviations that occur during a period you identify as a startup, shutdown, or malfunction are violations according to the provisions in §63.6(e).

(i) [Reserved]

(j) You must maintain records as specified in §§63.3130 and 63.3131.

§ 63.3164 What are the general requirements for performance tests?

(a) You must conduct each performance test required by §63.3160 according to the requirements in §63.7(e)(1) and under the conditions in this section unless you obtain a waiver of the performance test according to the provisions in §63.7(h).

(1) Representative coating operation operating conditions. You must conduct the performance test under representative operating conditions for the coating operation. Operations during periods of startup, shutdown, or malfunction, and during periods of nonoperation do not constitute representative conditions. You must record the process information that is necessary to document operating conditions during the test and explain why the conditions represent normal operation.

(2) Representative emission capture system and add-on control device operating conditions. You must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. You must record information that is necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions represent normal operation.

(b) You must conduct each performance test of an emission capture system according to the requirements in §63.3165. You must conduct each performance test of an add-on control device according to the requirements in §63.3166.

§ 63.3165 How do I determine the emission capture system efficiency?

You must use the procedures and test methods in this section to determine capture efficiency as part of the performance test required by §63.3160. For purposes of this subpart, a spray booth air seal is not considered a natural draft opening in a PTE or a temporary total enclosure provided you demonstrate that the direction of air movement across the interface between the spray booth air seal and the spray booth is into the spray booth. For purposes of this subpart, a bake oven air seal is not considered a natural draft opening in a PTE or a temporary total enclosure provided you demonstrate that the direction of air movement across the interface between the bake oven air seal and the bake oven is into the bake oven. You may use lightweight strips of fabric or paper, or smoke tubes to make such demonstrations as part of showing that your capture system is a PTE or conducting a capture efficiency test using a temporary total enclosure. You cannot count air flowing from a spray booth air seal into a spray booth as air flowing through a natural draft opening into a PTE or into a temporary total enclosure unless you elect to treat that spray booth air seal as a natural draft opening. You cannot count air flowing from a bake oven air seal into a bake oven as air flowing through a natural draft opening into a PTE or into a temporary total enclosure unless you elect to treat that bake oven air seal as a natural draft opening.

(a) Assuming 100 percent capture efficiency. You may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a)(1) and (2) of this section are met:

(1) The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.

(2) All coatings and thinners used in the coating operation are applied within the capture system, and coating solvent flash-off and coating curing and drying occurs within the

capture system. For example, this criterion is not met if parts enter the open shop environment when being moved between a spray booth and a curing oven.

(b) Measuring capture efficiency. If the capture system does not meet both of the criteria in paragraphs (a)(1) and (2) of this section, then you must use one of the five procedures described in paragraphs (c) through (g) of this section to measure capture efficiency. The capture efficiency measurements use TVH capture efficiency as a surrogate for organic HAP capture efficiency. For the protocols in paragraphs (c) and (d) of this section, the capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, whichever is longer, up to 8 hours. For the purposes of this test, a production run means the time required for a single part to go from the beginning to the end of production, which includes surface preparation activities and drying or curing time.

(c) Liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure. The liquid-to-uncaptured-gas protocol compares the mass of liquid TVH in materials used in the coating operation to the mass of TVH emissions not captured by the emission capture system. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (c)(1) through (6) of this section to measure emission capture system efficiency using the liquid-to-uncaptured-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings and thinners are applied, and all areas where emissions from these applied coatings and thinners subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204A or F of appendix M to 40 CFR part 51 to determine the mass fraction of TVH liquid input from each coating and thinner used in the coating operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term volatile organic compounds (VOC) in the methods.

(3) Use Equation 1 of this section to calculate the total mass of TVH liquid input from all the coatings and thinners used in the coating operation during each capture efficiency test run.

$$TVH_{used} = \sum_{i=1}^{n} (TVH_i)(Vol_i)(D_i) \qquad (Eq.\ 1)$$

Where:
TVHi = Mass fraction of TVH in coating or thinner, i, used in the coating operation during the capture efficiency test run, kg TVH per kg material.
Voli = Total volume of coating or thinner, i, used in the coating operation during the capture efficiency test run, liters.
Di = Density of coating or thinner, i, kg material per liter material.
n = Number of different coatings and thinners used in the coating operation during the capture efficiency test run.

(4) Use Method 204D or E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(5) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 2 of this section:

$$CE = \frac{\left(TVH_{used} - TVH_{uncaptured}\right)}{TVH_{used}} \times 100 \qquad (Eq.\ 2)$$

Where:
CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.
TVH used = Total mass of TVH liquid input used in the coating operation during the capture efficiency test run, kg.
TVH uncaptured= Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

(6) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(d) Gas-to-gas protocol using a temporary total enclosure or a building enclosure. The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system to the mass of TVH emissions not captured. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (d)(1) through (5) of this section to measure emission capture system efficiency using the gas-to-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the coating operation where coatings and thinners are applied, and all areas where emissions from these applied coatings and thinners subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions generated by the coating operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204B or C of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) The sampling points for the Method 204B or C measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device.

(ii) If multiple emission streams from the capture system enter the add-on control device without a single common duct, then the emissions entering the add-on control device must be simultaneously or sequentially measured in each duct, and the total emissions entering the add-on control device must be determined.

(3) Use Method 204D or E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each

capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(4) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 3 of this section:

$$CE = \frac{TVH_{captured}}{\left(TVH_{captured} + TVH_{uncaptured}\right)} \times 100 \qquad \text{(Eq. 3)}$$

Where:
CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.
TVHcaptured = Total mass of TVH captured by the emission capture system as measured at the inlet to the add-on control device during the emission capture efficiency test run, kg.
TVHuncaptured = Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

(5) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(e) Panel testing to determine the capture efficiency of flash-off or bake oven emissions. You may conduct panel testing to determine the capture efficiency of flash-off or bake oven emissions using ASTM Method D5087–02, “Standard Test Method for Determining Amount of Volatile Organic Compound (VOC) Released from Solventborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement)” (incorporated by reference, see §63.14), ASTM Method D6266–00a, “Test Method for Determining the Amount of Volatile Organic Compound (VOC) Released from Waterborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement)” (incorporated by reference, see §63.14), or the guidelines presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). You may conduct panel testing on representative coatings as described in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). The results of these panel testing procedures are in units of mass of VOC per volume of coating solids deposited and must be converted to a percent value for use in this subpart. If you panel test representative coatings, then you may convert the panel test result for each representative coating either to a unique percent capture efficiency for each coating grouped with that representative coating by using coating specific values for the volume of coating solids deposited per volume of coating used, mass of VOC per volume of coating, volume fraction solids, transfer efficiency, density and mass fraction VOC in Equations 4 through 6 of this section; or to a composite percent capture efficiency for the group of coatings by using composite values for the group of coatings for the volume of coating solids deposited per volume of coating used and for the mass of VOC per volume of coating, and average values for the group of coatings for volume fraction solids, transfer efficiency, density and mass fraction VOC in Equations 4 through 6 of this section. If you panel test each coating, then you must convert the panel test result for each coating to a unique percent capture efficiency for that coating by using coating specific values for the volume of coating solids deposited per volume of coating used, mass of VOC per volume of coating, volume fraction solids, transfer efficiency, density, and mass fraction VOC in Equations 4 through 6 of this section. Panel test results expressed in units of mass of VOC per volume of coating solids deposited must be converted to percent capture efficiency using Equation 4 of this section. (An alternative for using panel test results expressed in units of mass of VOC per mass of coating solids deposited is presented in paragraph (e)(3) of this section.)

$$CE_i = (P_{v,i})(V_{sdep,i})(100)/(VOC_i) \qquad (Eq. 4)$$

Where:
CEi = Capture efficiency for coating, i, or for the group of coatings including coating, i, for the flash-off area or bake oven for which the panel test is conducted, percent.
Pi = Panel test result for coating, i, or for the coating representing coating, i, in the panel test, kg of VOC per liter of coating solids deposited.
Vsdep,i = Volume of coating solids deposited per volume of coating used for coating, i, or composite volume of coating solids deposited per volume of coating used for the group of coatings including coating, i, in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, liter of coating solids deposited per liter of coating used, from Equation 5 of this section.
VOCi = Mass of VOC per volume of coating for coating, i, or composite mass of VOC per volume of coating for the group of coatings including coating, i, kg per liter, from Equation 6 of this section.

(1) Calculate the volume of coating solids deposited per volume of coating used for coating, i, or the composite volume of coating solids deposited per volume of coating used for the group of coatings including coating, i, used during the month in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted using Equation 5 of this section:

$$V_{sdep,i} = (V_{s,i})(TE_{c,i}) \qquad (Eq. 5)$$

Where:
Vsdep,i = Volume of coating solids deposited per volume of coating used for coating, i, or composite volume of coating solids deposited per volume of coating used for the group of coatings including coating, i, in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, liter of coating solids deposited per liter of coating used.
Vs,i = Volume fraction of coating solids for coating, i, or average volume fraction of coating solids for the group of coatings including coating, i, liter coating solids per liter coating, determined according to §63.3161(f).
TEc,i = Transfer efficiency of coating, i, or average transfer efficiency for the group of coatings including coating, i, in the spray booth(s) for the flash-off area or bake oven for which the panel test is conducted determined according to §63.3161(g), expressed as a decimal, for example 60 percent must be expressed as 0.60. (Transfer efficiency also may be determined by testing representative coatings. The same coating groupings may be appropriate for both transfer efficiency testing and panel testing. In this case, all of the coatings in a panel test grouping would have the same transfer efficiency.)

(2) Calculate the mass of VOC per volume of coating for coating, i, or the composite mass of VOC per volume of coating for the group of coatings including coating, i, used during the month in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, kg, using Equation 6 of this section:

$$VOC_i = (D_{c,i})(Wvoc_{c,i}) \qquad (Eq. 6)$$

Where:
VOCi = Mass of VOC per volume of coating for coating, i, or composite mass of VOC per volume of coating for the group of coatings including coating, i, used during the month in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, kg VOC per liter coating.
Dc,i = Density of coating, i, or average density of the group of coatings including coating, i, kg coating per liter coating, density determined according to §63.3151(b).
Wvocc,i = Mass fraction of VOC in coating, i, or average mass fraction of VOC for the group of coatings including coating, i, kg VOC per kg coating, determined by Method 24 (appendix A to 40 CFR part 60) or the guidelines for combining analytical VOC content and formulation solvent content presented in "Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).

(3) As an alternative, you may choose to express the results of your panel tests in units of mass of VOC per mass of coating solids deposited and convert such results to a percent using Equation 7 of this section. If you panel test representative coatings, then you may convert the panel test result for each representative coating either to a unique percent capture efficiency for each coating grouped with that representative coating by using coating specific values for the mass of coating solids deposited per mass of coating used, mass fraction VOC, transfer efficiency, and mass fraction solids in Equations 7 and 8 of this section; or to a composite percent capture efficiency for the group of coatings by using composite values for the group of coatings for the mass of coating solids deposited per mass of coating used and average values for the mass of VOC per volume of coating, average values for the group of coatings for mass fraction VOC, transfer efficiency, and mass fraction solids in Equations 7 and 8 of this section. If you panel test each coating, then you must convert the panel test result for each coating to a unique percent capture efficiency for that coating by using coating specific values for the mass of coating solids deposited per mass of coating used, mass fraction VOC, transfer efficiency, and mass fraction solids in Equations 7 and 8 of this section. Panel test results expressed in units of mass of VOC per volume of coating solids deposited must be converted to percent capture efficiency using Equation 7 of this section:

$$CE_i = (P_{m,i})(W_{sdep,i})(100)/(Wvoc_{c,i}) \qquad \text{(Eq. 7)}$$

Where:
CEi = Capture efficiency for coating, i, or for the group of coatings including coating, i, for the flash-off area or bake oven for which the panel test is conducted, percent.
Pm,i = Panel test result for coating, i, or for the coating representing coating, i, in the panel test, kg of VOC per kg of coating solids deposited.
Wsdep,i = Mass of coating solids deposited per mass of coating used for coating i, or composite mass of coating solids deposited per mass of coating used for the group of coatings including coating, i, in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, kg of solids deposited per kg of coating used, from Equation 8 of this section.
Wvocc,i = Mass fraction of VOC in coating, i, or average mass fraction of VOC for the group of coatings including coating, i, kg VOC per kg coating, determined by Method 24 (appendix A to 40 CFR part 60) or the guidelines for combining analytical VOC content and formulation solvent content presented in "Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).

(4) Calculate the mass of coating solids deposited per mass of coating used for each coating or the composite mass of coating solids deposited per mass of coating used for each group of coatings used during the month in the spray booth(s) preceding the flash-

off area or bake oven for which the panel test is conducted using Equation 8 of this section:

$$W_{sdep,i} = \left(W_{s,i}\right)\left(TE_{c,i}\right) \qquad \text{(Eq. 8)}$$

Where:
Wsdep,i = Mass of coating solids deposited per mass of coating used for coating, i, or composite mass of coating solids deposited per mass of coating used for the group of coatings including coating, i, in the spray booth(s) preceding the flash-off area or bake oven for which the panel test is conducted, kg coating solids deposited per kg coating used.
Ws,i = Mass fraction of coating solids for coating, i, or average mass fraction of coating solids for the group of coatings including coating, i, kg coating solids per kg coating, determined by Method 24 (appendix A to 40 CFR part 60) or the guidelines for combining analytical VOC content and formulation solvent content presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).
TEc,i = Transfer efficiency of coating, i, or average transfer efficiency for the group of coatings including coating, i, in the spray booth(s) for the flash-off area or bake oven for which the panel test is conducted determined according to §63.3161(g), expressed as a decimal, for example 60 percent must be expressed as 0.60. (Transfer efficiency also may be determined by testing representative coatings. The same coating groupings may be appropriate used for both transfer efficiency testing and panel testing. In this case, all of the coatings in a panel test grouping would have the same transfer efficiency.)

(f) Alternative capture efficiency procedure. As an alternative to the procedures specified in paragraphs (c) through (e) and (g) of this section, you may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the DQO or LCL approach as described in appendix A to subpart KK of this part.

(g) Panel testing to determine the capture efficiency of spray booth emissions from solvent-borne coatings. You may conduct panel testing to determine the capture efficiency of spray booth emissions from solvent-borne coatings using the procedure in appendix A to this subpart.

§ 63.3166 How do I determine the add-on control device emission destruction or removal efficiency?

You must use the procedures and test methods in this section to determine the add-on control device emission destruction or removal efficiency as part of the performance test required by §63.3160. You must conduct three test runs as specified in §63.7(e)(3), and each test run must last at least 1 hour.

(a) For all types of add-on control devices, use the test methods specified in paragraphs (a)(1) through (5) of this section.

(1) Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.

(2) Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight. The ANSI/ASME PTC 19.10–1981, “Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus]” (incorporated by reference, see §63.14), may be used as an alternative to Method 3B.

(4) Use Method 4 of appendix A to 40 CFR part 60 to determine stack gas moisture.

(5) Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.

(b) Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously, using either Method 25 or 25A of appendix A to 40 CFR part 60, as specified in paragraphs (b)(1) through (3) of this section. You must use the same method for both the inlet and outlet measurements.

(1) Use Method 25 if the add-on control device is an oxidizer and you expect the total gaseous organic concentration as carbon to be more than 50 parts per million by volume (ppmv) at the control device outlet.

(2) Use Method 25A if the add-on control device is an oxidizer and you expect the total gaseous organic concentration as carbon to be 50 ppmv or less at the control device outlet.

(3) Use Method 25A if the add-control device is not an oxidizer.

(c) If two or more add-on control devices are used for the same emission stream, then you must measure emissions at the outlet of each device. For example, if one add-on control device is a concentrator with an outlet for the high-volume, dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet for the low-volume, concentrated stream that is treated with the oxidizer, you must measure emissions at the outlet of the oxidizer and the high volume dilute stream outlet of the concentrator.

(d) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 1 of this section. If there is more than one inlet or outlet to the add-on control device, you must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

$$M_f = Q_{sd} C_c (12)(0.0416)(10^{-6}) \qquad \text{(Eq. 1)}$$

Where:
Mf = Total gaseous organic emissions mass flow rate, kg per hour (kg/h).
Cc = Concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, ppmv, dry basis.
Qsd = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters per hour (dscm/h).
0.0416 = Conversion factor for molar volume, kg-moles per cubic meter (mol/m 3) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

(e) For each test run, determine the add-on control device organic emissions destruction or removal efficiency using Equation 2 of this section:

$$DRE = \frac{M_{fi} - M_{fo}}{M_{fi}}(100) \qquad \text{(Eq. 2)}$$

Where:
DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent.
Mfi = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h.
Mfo = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

(f) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

§ 63.3167 How do I establish the add-on control device operating limits during the performance test?

During the performance test required by §63.3160 and described in §§63.3164 and 63.3166, you must establish the operating limits required by §63.3093 according to this section, unless you have received approval for alternative monitoring and operating limits under §63.8(f) as specified in §63.3093.

(a) Thermal oxidizers. If your add-on control device is a thermal oxidizer, establish the operating limit according to paragraphs (a)(1) through (3) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

(2) Use all valid data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for your thermal oxidizer.

(3) As an alternative, if the latest operating permit issued before April 26, 2007, for the thermal oxidizer at your facility contains recordkeeping and reporting requirements for the combustion temperature that are consistent with the requirements for thermal oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for the combustion temperature for each such thermal oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average combustion temperature during the performance test of that thermal oxidizer. If you do not have an operating permit for the thermal oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the thermal oxidizer at your facility contains recordkeeping and reporting requirements for the combustion temperature that are consistent with the

requirements for thermal oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for the combustion temperature for each such thermal oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average combustion temperature during the performance test of that thermal oxidizer. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the combustion temperature maintained during the performance test as the minimum operating limit for a thermal oxidizer, then you must keep the combustion temperature set point on that thermal oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that thermal oxidizer and the average combustion temperature maintained during the performance test for that thermal oxidizer.

(b) Catalytic oxidizers. If your add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (b)(1) through (3) or paragraphs (b)(4) through (6) of this section.

(1) During the performance test, you must monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use all valid data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. The minimum operating limits for your catalytic oxidizer are the average temperature just before the catalyst bed maintained during the performance test of that catalytic oxidizer and 80 percent of the

average temperature difference across the catalyst bed maintained during the performance test of that catalytic oxidizer, except during periods of low production the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. A low production period is when production is less than 80 percent of production rate during the performance test of that catalytic oxidizer.

(3) As an alternative, if the latest operating permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limits for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer and 80 percent of the average temperature difference across the catalyst bed maintained during the performance test for that catalytic oxidizer, except during periods of low production the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. If you do not have an operating permit for the catalytic oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limits for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer and 80 percent of the average temperature difference across the catalyst bed maintained during the performance test for that catalytic oxidizer, except during periods of low production the latter minimum operating limit is to maintain a positive temperature gradient across the catalyst bed. A low production period is when production is less than 80 percent of production rate during the performance test. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test as the minimum operating limits for a catalytic oxidizer, then you must keep the set point for the temperature just before the catalyst bed on that catalytic oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that catalytic oxidizer and the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer.

(4) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for your catalytic oxidizer as specified in paragraph (b)(6) of this section. During the performance test, you must monitor and record the temperature just before the catalyst bed at least once every 15 minutes during each of the three test runs. Use all valid data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for your catalytic oxidizer.

(5) If the latest operating permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer. If you do not have an operating permit for the catalytic oxidizer at your facility and the latest construction permit issued before April 26, 2007, for the catalytic oxidizer at your facility contains recordkeeping and reporting requirements for the temperature before the catalyst bed that are consistent with the requirements for catalytic oxidizers in 40 CFR 60.395(c), then you may set the minimum operating limit for

each such catalytic oxidizer at your affected source at 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer. If you use 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature just before the catalyst bed maintained during the performance test as the minimum operating limit for a catalytic oxidizer, then you must keep the set point for the temperature just before the catalyst bed on that catalytic oxidizer no lower than 14 degrees Celsius (25 degrees Fahrenheit) below the lower of that set point during the performance test for that catalytic oxidizer and the average temperature just before the catalyst bed maintained during the performance test for that catalytic oxidizer.

(6) You must develop and implement an inspection and maintenance plan for your catalytic oxidizer(s) for which you elect to monitor according to paragraph (b)(4) or (5) of this section. The plan must address, at a minimum, the elements specified in paragraphs (b)(6)(i) through (iii) of this section.

(i) Annual sampling and analysis of the catalyst activity (*i.e.,* conversion efficiency) following the oxidizer manufacturer's or catalyst supplier's recommended procedures.

(ii) Monthly inspection of the oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjustment of the equipment to assure proper air-to-fuel mixtures.

(iii) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, you must replace the catalyst bed and conduct a new performance test to determine destruction efficiency according to §63.3166.

(c) Intentionally omitted.

(d) Intentionally omitted.

(e) Intentionally omitted.

(f) Emission capture systems. For each capture device that is not part of a PTE that meets the criteria of §63.3165(a) and that is not capturing emissions from a downdraft spray booth or from a flash-off area or bake oven associated with a downdraft spray booth, establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (f)(1) and (2) of this section. The operating limit for a PTE is specified in Table 1 to this subpart.

(1) During the capture efficiency determination required by §63.3160 and described in §§63.3164 and 63.3165, you must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in your emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet.

(2) Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device, using all valid data. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.

§ 63.3168 What are the requirements for continuous parameter monitoring system installation, operation, and maintenance?

(a) General. You must install, operate, and maintain each CPMS specified in paragraphs (c), (e), (f), and (g) of this section according to paragraphs (a)(1) through (6) of this section. You must install, operate, and maintain each CPMS specified in paragraphs (b) and (d) of this section according to paragraphs (a)(3) through (5) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four equally-spaced successive cycles of CPMS operation in 1 hour.

(2) You must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.

(3) You must record the results of each inspection, calibration, and validation check of the CPMS.

(4) You must maintain the CPMS at all times and have available necessary parts for routine repairs of the monitoring equipment.

(5) You must operate the CPMS and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).

(6) You must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. You must use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.

(7) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out of control and data are not available for required calculations is a deviation from the monitoring requirements.

(b) Capture system bypass line. You must meet the requirements of paragraphs (b)(1) and (2) of this section for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere.

(1) You must monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened. The method used to monitor or secure the valve or closure mechanism must meet one of the requirements specified in paragraphs (b)(1)(i) through (iv) of this section.

(i) Flow control position indicator. Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that takes a reading at least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. The time of occurrence and flow control position must be recorded, as well as every time the flow direction is changed. The flow control position indicator must be installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere.

(ii) Car-seal or lock-and-key valve closures. Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. You must visually inspect the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position, and the emissions are not diverted away from the add-on control device to the atmosphere.

(iii) Valve closure monitoring. Ensure that any bypass line valve is in the closed (nondiverting) position through monitoring of valve position at least once every 15 minutes. You must inspect the monitoring system at least once every month to verify that the monitor will indicate valve position.

(iv) Automatic shutdown system. Use an automatic shutdown system in which the coating operation is stopped when flow is diverted by the bypass line away from the add-on control device to the atmosphere when the coating operation is running. You must inspect the automatic shutdown system at least once every month to verify that it will detect diversions of flow and shut down the coating operation.

(2) If any bypass line is opened, you must include a description of why the bypass line was opened and the length of time it remained open in the semiannual compliance reports required in §63.3120.

(c) Thermal oxidizers and catalytic oxidizers. If you are using a thermal oxidizer or catalytic oxidizer as an add-on control device (including those used to treat desorbed concentrate streams from concentrators or carbon adsorbers), you must comply with the requirements in paragraphs (c)(1) through (3) of this section:

(1) For a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.

(2) For a catalytic oxidizer, install a gas temperature monitor upstream of the catalyst bed. If you establish the operating parameters for a catalytic oxidizer under §63.3167(b)(1) through (3), you must also install a gas temperature monitor downstream of the catalyst bed. The temperature monitors must be in the gas stream immediately before and after the catalyst bed to measure the temperature difference across the bed. If you establish the operating parameters for a catalytic oxidizer under §63.3167(b)(4) through (6), you need not install a gas temperature monitor downstream of the catalyst bed.

(3) For all thermal oxidizers and catalytic oxidizers, you must meet the requirements in paragraphs (a)(1) through (6) and (c)(3)(i) through (vii) of this section for each gas temperature monitoring device.

(i) Locate the temperature sensor in a position that provides a representative temperature.

(ii) Use a temperature sensor with a measurement sensitivity of 4 degrees Fahrenheit or 0.75 percent of the temperature value, whichever is larger.

(iii) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(iv) If a gas temperature chart recorder is used, it must have a measurement sensitivity in the minor division of at least 20 degrees Fahrenheit.

(v) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, you must conduct a temperature sensor validation check in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 30 degrees Fahrenheit of the process temperature sensor reading.

(vi) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor.

(vii) At least monthly, inspect components for integrity and electrical connections for continuity, oxidation, and galvanic corrosion.

(d) Intentionally omitted.

(e) Intentionally omitted.

(f) Intentionally omitted.

(g) Emission capture systems. The capture system monitoring system must comply with the applicable requirements in paragraphs (g)(1) and (2) of this section.

(1) For each flow measurement device, you must meet the requirements in paragraphs (a)(1) through (6) and (g)(1)(i) through (iv) of this section.

(i) Locate a flow sensor in a position that provides a representative flow measurement in the duct from each capture device in the emission capture system to the add-on control device.

(ii) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(iii) Conduct a flow sensor calibration check at least semiannually.

(iv) At least monthly, inspect components for integrity, electrical connections for continuity, and mechanical connections for leakage.

(2) For each pressure drop measurement device, you must comply with the requirements in paragraphs (a)(1) through (6) and (g)(2)(i) through (vi) of this section.

(i) Locate the pressure tap(s) in a position that provides a representative measurement of the pressure drop across each opening you are monitoring.

(ii) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(iii) Check pressure tap pluggage daily.

(iv) Using an inclined manometer with a measurement sensitivity of 0.0002 inch water, check gauge calibration quarterly and transducer calibration monthly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(vi) At least monthly, inspect components for integrity, electrical connections for continuity, and mechanical connections for leakage.

Compliance Requirements for the Combined Primer-Surfacer, Topcoat, Final Repair, Glass Bonding Primer, and Glass Bonding Adhesive Emission Limitations and the Separate Electrodeposition Primer Emission Limitations

§ 63.3170 By what date must I conduct performance tests and other initial compliance demonstrations?

(a) Intentionally omitted.

(b) Existing affected sources. For an existing affected source, you must meet the requirements of paragraphs (b)(1) through (3) of §63.3160.

§ 63.3171 How do I demonstrate initial compliance?

(a) You must meet all of the requirements of this section to demonstrate initial compliance. To demonstrate initial compliance, the organic HAP emissions from the combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) must meet the applicable emission limitation in §63.3090(b) or §63.3091(b); and the organic HAP emissions from the electrodeposition primer operation must meet the applicable emissions limitations in §63.3092(a) or (b).

(b) Compliance with operating limits. Except as provided in §63.3160(a)(4), you must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by §63.3093, using the procedures specified in §§63.3167 and 63.3168.

(c) Compliance with work practice requirements. You must develop, implement, and document your implementation of the work practice plans required by §63.3094(b) and (c) during the initial compliance period, as specified in §63.3130.

(d) Compliance with emission limits. You must follow the procedures in §63.3161(e) through (n), excluding materials used in electrodeposition primer operations, to demonstrate compliance with the applicable emission limit in §63.3090(b) or §63.3091(b). You must follow the procedures in paragraph (e) of this section to demonstrate compliance with the emission limit in §63.3092(a), or paragraphs (f) through (g) of this section to demonstrate compliance with the emission limitations in §63.3092(b).

(e) Determine the mass fraction of each organic HAP in each material used in the electrodeposition primer operation. You must determine the mass fraction of each organic HAP for each material used in the electrodeposition primer operation during the compliance period by using one of the options in paragraphs (e)(1) through (3) of this section.

(1) Method 311 (appendix A to 40 CFR part 63). You may use Method 311 for determining the mass fraction of each organic HAP.

(2) Alternative method. You may use an alternative test method for determining the mass fraction of organic HAP once the Administrator has approved it. You must follow the procedure in §63.7(f) to submit an alternative test method for approval.

(3) Information from the supplier or manufacturer of the material. You may rely on information other than that generated by the test methods specified in paragraphs (e)(1) and (2) of this section, such as manufacturer's formulation data, if it represents each organic HAP that is present at 0.1 percent by mass or more for OSHA-defined carcinogens, as specified in 29 CFR 1910.1200(d)(4), and at 1.0 percent by mass or more for other compounds. If there is a disagreement between such information and results of a test conducted according to paragraph (e)(1) or (2) of this section, then the test method results will take precedence unless after consultation, the facility

demonstrates to the satisfaction of the enforcement authority that the facility's data are correct.

(f) Capture of electrodeposition bake oven emissions. You must show that the electrodeposition bake oven meets the criteria in sections 5.3 through 5.5 of Method 204 of appendix M to 40 CFR part 51 and directs all of the exhaust gases from the bake oven to an add-on control device.

(g) Control of electrodeposition bake oven emissions. Determine the efficiency of each control device on each electrodeposition bake oven using the procedures in §§63.3164 and 63.3166.

(h) Compliance demonstration. To demonstrate initial compliance, the organic HAP emissions from the combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) must meet the applicable emission limitation in §63.3090(b) or §63.3091(b); the organic HAP emissions from the electrodeposition primer operation must meet the applicable emissions limitations in §63.3092(a) or (b). You must keep all records as required by §§63.3130 and 63.3131. As part of the Notification of Compliance Status required by §63.3110, you must submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate from the combined primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners, except for deadener materials and for adhesive and sealer materials that are not components of glass bonding systems, used in coating operations added to the affected source pursuant to §63.3082(c) was less than or equal to the applicable emission limit in §63.3090(b) or §63.3091(b), and the organic HAP emissions from the electrodeposition primer operation met the applicable emissions limitations in §63.3092(a) or (b), and you achieved the operating limits required by §63.3093 and the work practice standards required by §63.3094.

§ 63.3172 [Reserved]

§ 63.3173 How do I demonstrate continuous compliance with the emission limitations?

(a) To demonstrate continuous compliance with the applicable emission limit in §63.3090(b) or §63.3091(b), the organic HAP emission rate for each compliance period determined according to the procedures in §63.3171 must be equal to or less than the applicable emission limit in §63.3090(b) or §63.3091(b). A compliance period consists of 1 month. Each month after the end of the initial compliance period described in §63.3170 is a compliance period consisting of that month. You must perform the calculations in §63.3171 on a monthly basis.

(b) If the organic HAP emission rate for any 1 month compliance period exceeded the applicable emission limit in §63.3090(b) or §63.3091(b), this is a deviation from the emission limitation for that compliance period and must be reported as specified in §§63.3110(c)(6) and 63.3120(a)(6).

(c) You must meet the requirements of §63.3163(c) through (j).

Other Requirements and Information

§ 63.3175 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, EPA, or a delegated authority such as your State, local, or tribal agency. If the Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your 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 EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are listed in paragraphs (c)(1) through (4) of this section:

(1) Approval of alternatives to the work practice standards in §63.3094 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

§ 63.3176 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in the General Provisions of this part, and in this section as follows:

Add-on control device means an air pollution control device, such as a thermal oxidizer or carbon adsorber, that reduces pollution in an air stream by destruction or removal before discharge to the atmosphere.

Add-on control device efficiency means the ratio of the emissions collected or destroyed by an add-on air pollution control device to the total emissions that are introduced into the control device, expressed as a percentage.

Adhesive means any chemical substance that is applied for the purpose of bonding two surfaces together.

Adhesive and sealer material means adhesives, sealers and thinners added to adhesives or sealers.

Anti-chip coating means a specialty type of coating designed to reduce stone chipping damage. It is applied on selected vehicle surfaces that are exposed to impingement by stones and other road debris. It is typically applied after the electrodeposition primer and before the topcoat Anti-chip coatings are a type of primer-surfacer.

Automobile means a motor vehicle designed to carry up to eight passengers, excluding vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property. See also Light-duty truck.

Automobile and/or light-duty truck assembly plant means facilities involved primarily in assembly of automobiles and light-duty trucks, including coating facilities and processes.

Bake oven air seal means an entry or entry vestibule to or an exit or exit vestibule from a bake oven which isolates the bake oven from the area immediately preceding (for an entry or entry vestibule) or immediately following (for an exit or exit vestibule) the bake oven. No significant VOC generating activity takes place in a bake oven air seal. Fresh air is supplied into a bake oven air seal and is then directed in part into the bake oven and in part into the area immediately preceding or immediately following the bake oven.

Basecoat/clearcoat means a topcoat system applied to exterior and selected interior vehicle surfaces primarily to provide an aesthetically pleasing appearance and acceptable durability performance. It consists of a layer of pigmented basecoat color coating, followed directly by a layer of a clear or semitransparent coating. It may include multiple layers of color coats or tinted clear materials.

Blackout coating means a type of specialty coating applied on selected vehicle surfaces (including areas of the engine compartment visible through the grill, and window and pillar trim) to provide a cosmetic appearance. Typically black or dark gray color. Blackout coating may be included in either the primer-surfacer or topcoat operations.

Body part means exterior parts such as hoods, fenders, doors, roof, quarter panels, decklids, tail gates, and cargo beds. Body parts were traditionally made of sheet metal, but now are also made of plastic. Bumpers, fascia, and cladding are not body parts.

Capture device means a hood, enclosure, room, floor sweep, or other means of containing or collecting emissions and directing those emissions into an add-on air pollution control device.

Capture efficiency or capture system efficiency means the portion (expressed as a percentage) of the pollutants from an emission source that is delivered to an add-on control device.

Capture system means one or more capture devices intended to collect emissions generated by a coating operation in the use of coatings, both at the point of application and at subsequent points where emissions from the coatings occur, such as flash-off, drying, or curing. As used in this subpart, multiple capture devices that collect emissions generated by a coating operation are considered a single capture system.

Catalytic oxidizer means a device for oxidizing pollutants or waste materials via flame and heat incorporating a catalyst to aid the combustion at lower operating temperature.

Cleaning material means a solvent used to remove contaminants and other materials such as dirt, grease, oil, and dried (e.g., depainting) or wet coating from a substrate before or after coating application; or from equipment associated with a coating operation, such as spray booths, spray guns, tanks, and hangers. Thus, it includes any cleaning material used on substrates or equipment or both.

Coating means a material applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, caulks, inks, adhesives, primers, deadeners, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances are not considered coatings for the purposes of this subpart.

Coating operation means equipment used to apply coating to a substrate (coating application) and to dry or cure the coating after application. A single coating operation always includes at least the point at which a coating is applied and all subsequent points in the affected source where organic HAP emissions from that coating occur. There may be multiple coating operations in an affected source. Coating application with hand-held nonrefillable aerosol containers, touchup bottles, touchup markers, marking pens, or pinstriping equipment is not a coating operation for the purposes of this subpart. The application of temporary materials such as protective oils and “travel waxes” that are designed to be removed from the vehicle before it is delivered to a retail purchaser is not a coating operation for the purposes of this subpart.

Coating solids means the nonvolatile portion of the coating.

Container means a receptacle, such as a can, vessel, tote, or tank, in which coatings, solvents or cleaning materials are held, stored, mixed, or carried.

Continuous parameter monitoring system (CPMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart; used to sample, condition (if applicable), analyze, and provide a record of coating operation, or capture system, or add-on control device parameters.

Controlled coating operation means a coating operation from which some or all of the organic HAP emissions are routed through an emission capture system and add-on control device.

Day tank means tank with agitation and pumping system used for mixing and continuous circulation of coatings from the paint storage area to the spray booth area of the paint shop.

Deadener means a specialty coating applied to selected vehicle surfaces for the purpose of reducing the sound of road noise in the passenger compartment.

Deadener material means deadener and thinner added to deadener.

Deposited solids means the coating solids which remain on the substrate or object being painted.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or fails to meet any emission limit or operating limit or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart. A deviation is not always a violation.

Electrodeposition primer or electrocoating primer means a process of applying a protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. It is a dip coating method that uses an electrical field to apply or deposit the conductive coating onto the part. The object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank. Also referred to as E-Coat, Uni-Prime, and ELPO Primer.

Emission limitation means an emission limit, operating limit, or work practice standard.

Final repair means the operations performed and coating(s) applied to completely-assembled motor vehicles or to parts that are not yet on a completely assembled motor vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than that used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat sensitive components on completely assembled motor vehicles.

Flash-off area means the portion of a coating process between the coating application station and the next coating application station or drying oven where solvent begins to evaporate from the coated vehicle.

Glass bonding adhesive means an adhesive used to bond windshield or other glass to an automobile or light-duty truck body.

Glass bonding primer means a primer applied to windshield or other glass, or to body openings to prepare the glass or body openings for the application of glass bonding adhesive, or the installation of adhesive bonded glass.

Guide coat means Primer-surfacer.

In-line repair means the operation performed and coating(s) applied to correct damage or imperfections in the topcoat on parts that are not yet on a completely assembled motor vehicle. The curing of the coatings applied in these operations is accomplished at essentially the same temperature as that used for curing the previously applied topcoat. Also referred to as high bake repair or high bake reprocess. In-line repair is considered part of topcoat.

Light-duty truck means vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property with gross vehicle weight rating of 8,500 lbs or less.

Manufacturer's formulation data means data on a material (such as a coating) that are supplied by the material manufacturer based on knowledge of the ingredients used to manufacture that material, rather than based on testing of the material with the test methods specified in §§63.3151 and 63.3161. Manufacturer's formulation data may include, but are not limited to, information on density, organic HAP content, volatile organic matter content, and coating solids content.

Mass fraction of organic HAP means the ratio of the mass of organic HAP to the mass of a material in which it is contained, expressed as kg of organic HAP per kg of material.

Month means a calendar month or a pre-specified period of 28 days to 35 days to allow for flexibility in recordkeeping when data are based on a business accounting period.

Organic HAP content means the mass of organic HAP per mass of coating material.

Paint line means a set of coating operations which includes a topcoat operation and, if present, includes electrodeposition primer, primer-surfacer, final repair, glass bonding primer and glass bonding adhesive operations in which the same new automobile or new light-duty truck bodies, or body parts for new automobiles, or new light-duty trucks are coated. The most typical paint line consists of a set of electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations in which the same new automobile or new light-duty truck bodies are coated.

Paint shop means the collection of all areas at the facility in which new automobile or new light-duty truck bodies, or body parts for new automobiles or new light-duty trucks are phosphated and coated (including application, flash-off, drying and curing of electrodeposition primer, primer-surfacer, topcoat, final repair, glass bonding primer, glass bonding adhesive, deadener, adhesives and sealers); all coating operations added to the affected source pursuant to §63.3082(c); all areas at the facility in which substrates or equipment are cleaned relating to the coating of new automobile or new light-duty truck bodies, the coating of body parts for new automobiles or new light-duty trucks, or coating operations added to the affected source pursuant to §63.3082(c); and all areas at the facility used for storage, mixing, conveying and waste handling of coatings, thinners and cleaning materials related to the coating of new automobile or new light-duty truck bodies, the coating of body parts for new automobiles or new light-duty trucks, or coating operations added to the affected source pursuant to §63.3082(c). If there is no application of topcoat to new automobile or new light-duty truck bodies, or body parts for new automobiles or new light-duty trucks at the facility, then for purposes of this subpart the facility does not have a paint shop.

Permanent total enclosure (PTE) means a permanently installed enclosure that meets the criteria of Method 204 of appendix M, 40 CFR part 51, for a PTE and that directs all the exhaust gases from the enclosure to an add-on control device.

Primer-surfacer means an intermediate protective coating applied on the electrodeposition primer and under the topcoat. It provides adhesion, protection, and appearance properties to the total finish. Also called a guide coat or surfacer. Anti-chip coatings are a type of primer-surfacer.

Purge/clean operation means the process of flushing paint out and cleaning the spray lines when changing colors or to remove undesired material. It includes use of air and solvents to clean the lines.

Purge capture means the capture of purge solvent and materials into a closed collection system immediately after purging the system. It is used to prevent the release of organic HAP emissions and includes the disposal of the captured purge material.

Purge material means the coating and associated cleaning solvent materials expelled from the spray system during the process of cleaning the spray lines and applicators when color-changing or to maintain the cleanliness of the spray system.

Protective oil means an organic material that is applied to metal for the purpose of providing lubrication or protection from corrosion without forming a solid film. This definition of protective oil includes, but is not limited to, lubricating oils, evaporative oils (including those that evaporate completely), and extrusion oils.

Research or laboratory operations means surface coating for which the primary purpose is research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and that is not part of the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

Responsible official means responsible official as defined in 40 CFR 70.2.

Sealer means a high solids, high viscosity material, generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating. The primary purpose of sealers is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. Also referred to as sealants.

Spray booth means a ventilated structure housing automatic and/or manual spray application equipment for coating operations. Includes facilities for the capture and entrapment of particulate overspray.

Spray booth air seal means an entry vestibule to or exit vestibule from a spray booth which isolates the spray booth from the area immediately preceeding (for an entry vestibule) or immediately following (for an exit vestibule) the spray booth. No coating application or other VOC generating activity takes place in a spray booth air seal. Fresh air is supplied into a spray booth air seal and is then directed in part into the spray booth and in part into the area immediately preceeding or immediately following the spray booth.

Startup, initial means the first time equipment is used in a facility to produce a salable product.

Surface preparation means use of a cleaning material on a portion of or all of a substrate. This includes use of a cleaning material to remove dried coating, which is sometimes called “depainting.”

Surfacer means Primer-surfacer.

Tack-wipe means solvent impregnated cloth used to remove dust from surfaces prior to application of coatings.

Temporary total enclosure means an enclosure constructed for the purpose of measuring the capture efficiency of pollutants emitted from a given source as defined in Method 204 of appendix M, 40 CFR part 51.

Thermal oxidizer means a device for oxidizing air pollutants or waste materials via flame and heat.

Thinner means an organic solvent that is added to a coating after the coating is received from the supplier.

Topcoat means the final coating system applied to provide the final color and/or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat.

Total volatile hydrocarbon (TVH) means the total amount of nonaqueous volatile organic matter determined according to Methods 204 and 204A through F of appendix M to 40 CFR part 51 and substituting the term TVH each place in the methods where the term VOC is used. The TVH includes both VOC and non-VOC.

Touchup bottle means a glass or metal bottle of less than 0.10 liter volume furnished with a brush that is permanently attached to the bottle closure.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of the object to the total amount of coating solids sprayed while applying the coating to the object.

Uncontrolled coating operation means a coating operation from which none of the organic HAP emissions are routed through an emission capture system and add-on control device.

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100(s).

Volume fraction of coating solids means the ratio of the volume of coating solids (also known as volume of nonvolatiles) to the volume of coating; liters of coating solids per liter of coating.

TABLE 1 TO SUBPART IIII OF PART 63 – OPERATING LIMITS FOR CAPTURE SYSTEMS AND ADD-ON CONTROL DEVICES

[If you are required to comply with operating limits by § 63.3093, you must comply with the applicable operating limits in the following table]

For the following device . . .	You must meet the following operating limit . . .	And you must demonstrate continuous compliance with the operating limit by
1. Thermal oxidizer.........	a. The average combustion temperature in any 3-hour period must not fall below the combustion temperature limit established according to § 63.3167(a).	i. Collecting the combustion temperature data according to § 63.3168(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average combustion temperature at or above temperature limit.
2. Catalytic oxidizer.......	a. The average temperature measured just before the catalyst bed in any 3-hour period must not fall below the limit established according to § 63.3167(b); and either.	i. Collecting the temperature data temperature according to § 63.3168(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature before the catalyst bed at or above the temperature limit.
	b. Ensure that the average temperature difference across the catalyst bed in any 3-hour period does not fall below the temperature difference limit established according to § 63.3167(b)(2); or.	i. Collecting the temperature data according to § 63.3168(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature difference at or above the

		temperature difference limit; or
	c. Develop and implement an inspection and maintenance plan according to § 63.3167(b)(4).	i. Maintaining an up-to-date inspection maintenance plan, records of annual catalyst activity checks, records of monthly inspections of the oxidizer system, and records of the annual internal inspections of the catalyst bed. If a problem is discovered during a monthly or annual inspection required by § 63.3167(b)(4), you must take corrective action as soon as practicable consistent with the manufacturer's recommendations.
6. Emission capture system that is a PTE.	a. The direction of the air flow at all times must be into the enclosure; and either. b. The average facial velocity of air through all natural draft openings in the enclosure must be at least 200 feet per minute; or. c. The pressure drop across the enclosure must be at least 0.007 inch water, as established in Method 204 of appendix M to 40 CFR part 51.	i. Collecting the direction of air flow, and either the facial velocity of air through all natural draft openings according to § 63.3168(g)(1) or the pressure drop across the enclosure according to § 63.3168(g)(2); and ii. Maintaining the facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the direction of air flow into the enclosure at all times.

7. Emission capture system that is not a PTE.	a. The average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in any 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to § 63.3167(f).	i. Vollecting the gas volumetric flow rate or duct static pressure for each capture device according to § 63.3168(g); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limit.

Table 2 to Subpart IIII of Part 63—Applicability of General Provisions to Subpart IIII of Part 63

[You must comply with the applicable General Provisions requirements according to the following table]

Citation	Subject	Applicable to subpart IIII	Explanation
§ 63.1(a)(1)-(12)	General Applicability.	Yes	
§ 63.1(b)(1)-(3)	Initial Applicability Determination.	Yes	Applicability to subpart IIII is also specified in § 63.3081.
§ 63.1(c)(1)	Applicability After Standard Established.	Yes	
§ 63.1(c)(2)	Applicability of Permit Program for Area Sources.	No	Area sources are not subject to subpart IIII.
§ 63.1(c)(5)	Extensions and Notifications.	Yes	
§ 63.1(e)	Applicability of permit Program Before Relevant Standard is Set.	Yes	
§ 63.2	Definitions	Yes	Additional definitions are specified in § 63.3176.
§ 63.3(a)-(c)	Units and Abbreviations.	Yes	
§ 63.4(a)(1)-(5)	Prohibited Activities.	Yes	
§ 63.4(b)-(c)	Circumvention/ Fragmentation.	Yes	
§ 63.5(a)	Preconstruction Review Applicability.	Yes	
§ 63.5(b)(1)-(6)	Requirements for Existing, Newly Constructed, and Reconstructed Sources.	Yes	
§ 63.5(d)	Application for Approval of Construction/ Reconstruction.	Yes	

§ 63.5(e)......................	Approval of Construction/ Reconstruction.	Yes........................	
§ 63.5(f)......................	Approval of Construction/ Reconstruction Based on Prior State Review.	Yes........................	
§ 63.6(a)......................	Compliance With Standards and Maintenance Requirements_Applicability.	Yes........................	
§ 63.6(b)(1)-(7)..............	Compliance Dates for New and Reconstructed Sources.	Yes........................	Section 63.3083 specifies the compliance dates.
§ 63.6(c)(1)-(5)..............	Compliance Dates for Existing Sources.	Yes........................	Section 63.3083 specifies the compliance dates.
§ 63.6(e)(1)-(2)..............	Operation and Maintenance.	Yes........................	
§ 63.6(e)(3)...................	SSMP..................	Yes........................	Only sources using an add-on control device to comply with the standard must complete SSMP.
§ 63.6(f)(1)...................	Compliance Except During Startup, Shutdown, and Malfunction.	Yes........................	Applies only to sources using an add-on control device to comply with the standards.
§ 63.6(f)(2)-(3)..............	Methods for Determining Compliance.	Yes.	
§ 63.6(g)(1)-(3)..............	Use of an Alternative Standard.	Yes.	
§ 63.6(h)......................	Compliance With Opacity/Visible Emission Standards.	No.........................	Subpart IIII does not establish opacity standards and does not require continuous opacity monitoring systems (COMS).

§ 63.6(i)	Extension of Compliance.	Yes.	
63.6(j)	Presidential Compliance Exemption.	Yes.	
§ 63.7(a)(1)	Performance Test Requirements_ Applicability.	Yes	Applies to all affected sources. Additional requirements for performance testing are specified in §§ 63.3164 and 63.3166.
§ 63.7(a)(2)	Performance Test Requirements_Dates.	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standards. Section 63.3160 specifies the schedule for performance test requirements that are earlier than those specified in § 63.7(a)(2).
§ 63.7(a)(3)	Performance Tests required By the Administrator.	Yes.	
§ 63.7(b)-(e)	Performance Test Requirements_Notification, Quality Assurance, Facilities Necessary for Safe Testing Conditions During Test.	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.
§ 63.7(f)	Performance Test Requirements_Use of Alternative Test Method.	Yes	Applies to all test methods except those used to determine capture system efficiency.

§ 63.7(g)-(h).................	Performance Test Requirements_Data Analysis, Recordkeeping, Reporting, Waiver of Test.	Yes........................	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.
§ 63.8(a)(1)-(3).............	Monitoring Requirements_ Applicability.	Yes........................	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standards. Additional requirements for monitoring are specified in § 63.3168.
§ 63.8(a)(4)..................	Additional Monitoring Requirements.	No.........................	Subpart IIII does not have monitoring requirements for flares.
§ 63.8(b).....................	Conduct of Monitoring.	Yes........................	
63.8(c)(1)-(3).................	Continuous Monitoring Systems (CMS) Operation and Maintenance.	Yes........................	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standards. Additional requirements for CMS operations and maintenance are specified in § 63.3168.
§ 63.8(c)(4)..................	CMS..................	No.........................	Section 63.3168 specifies the requirements for the operation of CMS for capture systems and

			add-on control devices at sources using these to comply with the standards.
§ 63.89(c)(5).................	COMS..................	No.........................	Subpart IIII does not have opacity or visible emission standards.
§ 63.8(c)(6)..................	CMS Requirements......	No.........................	Section 63.3168 specifies the requirements for monitoring systems for capture systems and add-on control devices at sources using these to comply with the standards.
§ 63.8(c)(7)..................	CMS Out-of-Control Periods.	No	....
§ 63.8(c)(8)..................	CMS Out-of-Control Periods Reporting.	No.........................	Section 63.3120 requires reporting of CMS out-of-control periods.
§ 63.8(d)-(e).................	Quality Control Program and CMS Performance Evaluation.	No.........................	Subpart IIII does not require the use of continuous emissions monitoring systems.
§ 63.8(f)(1)-(5)..............	Use of an Alternative Monitoring Method.	Yes.	
§ 63.8(f)(6)..................	Alternative to Relative Accuracy Test.	No.........................	Subpart IIII does not require the use of continuous emissions monitoring systems.
§ 63.8(g)(1)-(5)..............	Data Reduction........	No.........................	Sections 63.3167 and 63.3168 specify monitoring data reduction.
§ 63.9(a)-(d).................	Notification Requirements.	Yes.	
§ 63.9(e).....................	Notification of Performance Test.	Yes........................	Applies only to capture system and add-on control device

			performance tests at sources using these to comply with the standards.
§ 63.9(f).....................	Notification of Visible Emissions/ Opacity Test.	No.........................	Subpart IIII does not have opacity or visible emission standards.
§ 63.9(g)(1)-(3)..............	Additional Notifications When Using CMS.	No.........................	Subpart IIII does not require the use of continuous emissions monitoring systems.
§ 63.9(h).....................	Notification of Compliance Status.	Yes........................	Section 63.3110 specifies the dates for submitting the notification of compliance status.
§ 63.9(i).....................	Adjustment of Submittal Deadlines.	Yes........................	....
§ 63.9(j).....................	Change in Previous Information.	Yes.	
§ 63.10(a)....................	Recordkeeping/ Reporting_Applicability and General Information.	Yes.	
§ 63.10(b)(1).................	General Recordkeeping Requirements.	Yes........................	Additional requirements are specified in §§ 63.3130 and 63.3131.
§ 63.10(b)(2)(i)-(v)..........	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS.	Yes........................	Requirements for startup, shutdown, and malfunction records only apply to capture systems and add-on control devices used to comply with the standards.
§ 63.10(b)(2)(vi)-(xi)........	....	Yes.	
§ 63.10(b)(2)(xii)............	Records...............	Yes.	

§ 63.10(b)(2)(xiii)		No	Subpart IIII does not require the use of continuous emissions monitoring systems.
§ 63.10(b)(2)(xiv)		Yes.	
§ 63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations.	Yes.	
§ 63.10(c)(1)-(6)	Additional Recordkeeping Requirements for Sources with CMS.	Yes.	
§ 63.10(c)(7)-(8)		No	The same records are required in § 63.3120(a)(6).
§ 63.10(c)(9)-(15)		Yes	
§ 63.10(d)(1)	General Reporting Requirements.	Yes	Additional requirements are specified in § 63.3120.
§ 63.10(d)(2)	Report of Performance Test Results.	Yes	Additional requirements are specified in § 63.3120(b).
§ 63.10(d)(3)	Reporting Opacity or Visible Emissions Observations.	No	Subpart IIII does not require opacity or visible emissions observations.
§ 63.10(d)(4)	Progress Reports for Sources With Compliance Extensions.	Yes.	
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports.	Yes	Applies only to capture systems and add-on control devices used to comply with the standards.
§ 63.10(e)(1)-(2)	Additional CMS Reports	No	Subpart IIII does not require the use of continuous emissions monitoring systems.

§ 63.10(e)(3).................	Excess Emissions/CMS Performance Reports.	No.........................	Section 63.3120(b) specifies the contents of periodic compliance reports.
§ 63.10(e)(4).................	COMS Data Reports.....	No.........................	Subpart IIII does not specify requirements for opacity or COMS.
§ 63.10(f)....................	Recordkeeping/ Reporting Waiver.	Yes	....
§ 63.11.......................	Control Device Requirements/Flares.	No.........................	Subpart IIII does not specify use of flares for compliance.
§ 63.12.......................	State Authority and Delegations.	Yes.	
§ 63.13.......................	Addresses.............	Yes.	
§ 63.14.......................	Incorporation by Reference.	Yes.	
§ 63.15.......................	Availability of Information/ Confidentiality.	Yes.	

Table 3 to Subpart IIII of Part 63—Default Organic HAP Mass Fraction for Solvents and Solvent Blends

[You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data]

Solvent type	Average organic HAP mass fraction	Typical organic HAP, percent by mass
Aliphatic \b\..................	0.03	1% Xylene, 1% Toluene, and 1% Ethylbenzene.
Aromatic \c\...................	0.06	4% Xylene, 1% Toluene, and 1% Ethylbenzene.

\a\ Use this table only if the solvent blend does not match any of the solvent blends in Table 3 to this subpart, and you only know whether the blend is aliphatic or aromatic.

\b\ E.g., Mineral Spirits 135, Mineral Spirits 150 EC, Naphtha, Mixed Hydrocarbon, Aliphatic Hydrocarbon, Aliphatic Naphtha, Naphthol Spirits, Petroleum Spirits, Petroleum Oil, Petroleum Naphtha, Solvent Naphtha, Solvent Blend.

\c\ E.g., Medium-flash Naphtha, High-flash Naphtha, Aromatic Naphtha, Light Aromatic Naphtha, Light Aromatic Hydrocarbons, Aromatic Hydrocarbons, Light Aromatic Solvent.

Table 4 to Subpart IIII of Part 63—Default Organic HAP Mass Fraction for Petroleum Solvent Groups

[You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data]

Solvent/solvent blend	CAS. No.	Average organic HAP mass fraction	Typical organic HAP, percent by mass
1. Toluene	108-88-3	1.0	Toluene.
2. Xylene(s)	1330-20-7	1.0	Xylenes, ethylbenzene.
3. Hexane	110-54-3	0.5	n-hexane.
4. n-Hexane	110-54-3	1.0	n-hexane.
5. Ethylbenzene	100-41-4	1.0	Ethylbenzene.
6. Aliphatic 140	....	0	None.
7. Aromatic 100	....	0.02	1% xylene, 1% cumene.
8. Aromatic 150	....	0.09	Naphthalene.
9. Aromatic naphtha	64742-95-6	0.02	1% xylene, 1% cumene.
10. Aromatic solvent	64742-94-5	0.1	Naphthalene.
11. Exempt mineral spirits	8032-32-4	0	None.
12. Ligroines (VM & P)	8032-32-4	0	None.
13. Lactol spirits	64742-89-6	0.15	Toluene.
14. Low aromatic white spirit	64742-82-1	0	None.
15. Mineral spirits	64742-88-7	0.01	Xylenes.
16. Hydrotreated naphtha	64742-48-9	0	None.
17. Hydrotreated light distillate	64742-47-8	0.001	Toluene.
18. Stoddard solvent	8052-41-3	0.01	Xylenes.
19. Super high-flash naphtha	64742-95-6	0.05	Xylenes.
20. Varsol ® solvent	8052-49-3	0.01	0.5% xylenes, 0.5% ethylbenzene.
21. VM & P naphtha	64742-89-8	0.06	3% toluene, 3% xylene.
22. Petroleum distillate mixture	68477-31-6	0.08	4% naphthalene, 4% biphenyl.

Appendix A to Subpart IIII of Part 63—Determination of Capture Efficiency of Automobile and Light-Duty Truck Spray Booth Emissions From Solvent-borne Coatings Using Panel Testing

1.0 Applicability, Principle, and Summary of Procedure.

1.1 Applicability.

This procedure applies to the determination of capture efficiency of automobile and light-duty truck spray booth emissions from solvent-borne coatings using panel testing. This procedure can be used to determine capture efficiency for partially controlled spray booths (*e.g.,* automated spray zones controlled and manual spray zones not controlled) and for fully controlled spray booths.

1.2 Principle.

1.2.1 The volatile organic compounds (VOC) associated with the coating solids deposited on a part (or panel) in a controlled spray booth zone (or group of contiguous controlled spray booth zones) partition themselves between the VOC that volatilize in the controlled spray booth zone (principally between the spray gun and the part) and the VOC that remain on the part (or panel) when the part (or panel) leaves the controlled spray booth zone. For solvent-borne coatings essentially all of the VOC associated with the coating solids deposited on a part (or panel) in a controlled spray booth zone that volatilize in the controlled spray booth zone pass through the waterwash and are exhausted from the controlled spray booth zone to the control device.

1.2.2 The VOC associated with the overspray coating solids in a controlled spray booth zone partition themselves between the VOC that volatilize in the controlled spray booth zone and the VOC that are still tied to the overspray coating solids when the overspray coating solids hit the waterwash. For solvent-borne coatings almost all of the VOC associated with the overspray coating solids that volatilize in the controlled spray booth zone pass through the waterwash and are exhausted from the controlled spray booth zone to the control device. The exact fate of the VOC still tied to the overspray coating solids when the overspray coating solids hit the waterwash is unknown. This procedure assumes that none of the VOC still tied to the overspray coating solids when the overspray coating solids hit the waterwash are captured and delivered to the control device. Much of this VOC may become entrained in the water along with the overspray coating solids. Most of the VOC that become entrained in the water along with the overspray coating solids leave the water, but the point at which this VOC leave the water is unknown. Some of the VOC still tied to the overspray coating solids when the overspray coating solids hit the waterwash may pass through the waterwash and be exhausted from the controlled spray booth zone to the control device.

1.2.3 This procedure assumes that the portion of the VOC associated with the overspray coating solids in a controlled spray booth zone that volatilizes in the controlled spray booth zone, passes through the waterwash and is exhausted from the controlled spray booth zone to the control device is equal to the portion of the VOC associated with the coating solids deposited on a part (or panel) in that controlled spray booth zone that volatilizes in the controlled spray booth zone, passes through the waterwash, and is exhausted from the controlled spray booth zone to the control device. This assumption is equivalent to treating all of the coating solids sprayed in the controlled spray booth zone as if they are deposited coating solids (*i.e.,* assuming 100 percent transfer efficiency) for purposes of using a panel test to determine spray booth capture efficiency.

1.2.4 This is a conservative (low) assumption for the portion of the VOC associated with the overspray coating solids in a controlled spray booth zone that volatilizes in the controlled spray booth zone. Thus, this assumption results in an underestimate of conservative capture efficiency. The overspray coating solids have more travel time and distance from the spray gun to the waterwash than the deposited coating solids have between the spray gun and the part (or panel). Therefore, the portion of the VOC associated with the overspray coating solids in a controlled spray booth zone that volatilizes in the controlled spray booth zone should be greater than the portion of the VOC associated with the coating solids deposited on a part (or panel) in that controlled spray booth zone that volatilizes in that controlled spray booth zone.

1.3 Summary of Procedure.

1.3.1 A panel test is performed to determine the mass of VOC that remains on the panel when the panel leaves a controlled spray booth zone. The total mass of VOC associated with the coating solids deposited on the panel is calculated.

1.3.2 The percent of the total VOC associated with the coating solids deposited on the panel in the controlled spray booth zone that remains on the panel when the panel leaves the controlled section of the spray booth is then calculated from the ratio of the two previously determined masses. The percent of the total VOC associated with the coating solids deposited on the panel in the controlled spray booth zone that is captured and delivered to the control device equals 100 minus this percentage. (The mass of VOC associated with the coating solids deposited on the panel which is volatilized and captured in the controlled spray booth zone equals the difference between the total mass of VOC associated with the coating solids deposited on the panel and the mass of VOC remaining with the coating solids deposited on the panel when the panel leaves the controlled spray booth zone.)

1.3.3 The percent of the total VOC associated with the coating sprayed in the controlled spray booth zone that is captured and delivered to the control device is assumed to be equal to the percent of the total VOC associated with the coating solids deposited on the panel in the controlled spray booth zone that is captured and delivered to the control device. The percent of the total VOC associated with the coating sprayed in the entire spray booth that is captured and delivered to the control device can be calculated by multiplying the percent of the total VOC associated with the coating sprayed in the controlled spray booth zone that is captured and delivered to the control device by the fraction of coating sprayed in the spray booth that is sprayed in the controlled spray booth zone.

2.0 Procedure.

2.1 You may conduct panel testing to determine the capture efficiency of spray booth emissions. You must follow the instructions and calculations in this appendix A, and use the panel testing procedures in ASTM Method D5087–02, “Standard Test Method for Determining Amount of Volatile Organic Compound (VOC) Released from Solventborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement)” (incorporated by reference, see §63.14), or the guidelines presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). You must weigh panels at the points described in section 2.5 of this appendix A and perform calculations as described in sections 3 and 4 of this appendix A. You may conduct panel tests on the production paint line in your facility or in a laboratory simulation of the production paint line in your facility.

2.2 You may conduct panel testing on representative coatings as described in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). If you panel test representative coatings, then you may calculate either a unique percent capture efficiency value for each coating grouped with that representative coating, or a composite percent capture efficiency value for the group of coatings. If you panel test each coating, then you must convert the panel test result for each coating to a unique percent capture efficiency value for that coating.

2.3 Identification of Controlled Spray Booth Zones.

You must identify each controlled spray booth zone or each group of contiguous controlled spray booth zones to be tested. (For example, a controlled bell zone immediately followed by a controlled robotic zone.) Separate panel tests are required for non-contiguous controlled spray booth zones. The flash zone between the last basecoat zone and the first clearcoat zone makes these zones non-contiguous.

2.4 Where to Apply Coating to the Panel.

If you are conducting a panel test for a single controlled spray booth zone, then you must apply coating to the panel only in that controlled spray booth zone. If you are conducting a panel test for a group of contiguous controlled spray booth zones, then you must apply coating to the panel only in that group of contiguous controlled spray booth zones.

2.5 How to Process and When to Weigh the Panel.

The instructions in this section pertain to panel testing of coating, i, or of the coating representing the group of coatings that includes coating, i.

2.5.1 You must weigh the blank panel. (Same as in bake oven panel test.) The mass of the blank panel is represented by $W_{blank,i}$ (grams).

2.5.2 Apply coating, i, or the coating representing coating, i, to the panel in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested (in plant test), or in a simulation of the controlled spray booth zone or group of contiguous controlled spray booth zones being tested (laboratory test).

2.5.3 Remove and weigh the wet panel as soon as the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested. (Different than bake oven panel test.) This weighing must be conducted quickly to avoid further evaporation of VOC. The mass of the wet panel is represented by $W_{wet,i}$ (grams).

2.5.4 Return the wet panel to the point in the coating process or simulation of the coating process where it was removed for weighing.

2.5.5 Allow the panel to travel through the rest of the coating process in the plant or laboratory simulation of the coating process. You must not apply any more coating to the panel after it leaves the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested. The rest of the coating process or simulation of the coating process consists of:

2.5.5.1 All of the spray booth zone(s) or simulation of all of the spray booth zone(s) located after the controlled spray booth zone or group of contiguous controlled spray booth zones being tested and before the bake oven where the coating applied to the panel is cured,

2.5.5.2 All of the flash-off area(s) or simulation of all of the flash-off area(s) located after the controlled spray booth zone or group of contiguous controlled spray booth zones being tested and before the bake oven where the coating applied to the panel is cured, and

2.5.5.3 The bake oven or simulation of the bake oven where the coating applied to the panel is cured.

2.5.6 After the panel exits the bake oven, you must cool and weigh the baked panel. (Same as in bake oven panel test.) The mass of the baked panel is represented by $W_{baked,i}$ (grams).

3.0 Panel Calculations.

The instructions in this section pertain to panel testing of coating, i, or of the coating representing the group of coatings that includes coating, i.

3.1 The mass of coating solids (from coating, i, or from the coating representing coating, i, in the panel test) deposited on the panel equals the mass of the baked panel minus the mass of the blank panel as shown in Equation A–1.

$$W_{sdep,i} = W_{baked,i} - W_{blank,i} \qquad \text{(Eq. A-1)}$$

Where:

$W_{sdep,i}$ = Mass of coating solids (from coating, i, or from the coating representing coating, i, in the panel test) deposited on the panel, grams.

3.2 The mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested equals the mass of the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested minus the mass of the baked panel as shown in Equation A–2.

$$W_{rem,i} = W_{wet,i} - W_{baked,i} \qquad \text{(Eq. A-2)}$$

Where:

$W_{rem,i}$ = Mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, grams.

3.3 Calculate the mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested per mass of coating solids deposited on the panel as shown in Equation A–3.

$$P_{m,i} = \left(W_{rem,i}\right)/\left(W_{sdep,i}\right) \qquad (Eq.\ \text{A-3})$$

Where:

$P_{m,i}$ = Mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested per mass of coating solids deposited on the panel, grams of VOC remaining per gram of coating solids deposited.

$W_{rem,i}$ = Mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, grams.

$W_{sdep,i}$ = Mass of coating solids (from coating, i, or from the coating representing coating, i, in the panel test) deposited on the panel, grams.

4.0 Converting Panel Result to Percent Capture.

The instructions in this section pertain to panel testing of for coating, i, or of the coating representing the group of coatings that includes coating, i.

4.1 If you panel test representative coatings, then you may convert the panel test result for each representative coating from section 3.3 of this appendix A either to a unique percent capture efficiency value for each coating grouped with that representative coating by using coating specific values for the mass fraction coating solids and mass fraction VOC in section 4.2 of this appendix A, or to a composite percent capture efficiency value for the group of coatings by using the average values for the group of coatings for mass fraction coating solids and mass fraction VOC in section 4.2 of this appendix A. If you panel test each coating, then you must convert the panel test result for each coating to a unique percent capture efficiency value by using coating specific values for the mass fraction coating solids and mass fraction VOC in section 4.2 of this appendix A. The mass fraction of VOC in the coating and the mass fraction of solids in the coating must be determined by Method 24 (appendix A to 40 CFR part 60) or by following the guidelines for combining analytical VOC content and formulation solvent content presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).

4.2 The percent of VOC for coating, i, or composite percent of VOC for the group of coatings including coating, i, associated with the coating solids deposited on the panel that remains on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested is calculated using Equation A–4.

$$Pvoc_{pan,i} = \left(P_{m,i}\right)\left(W_{s,i}\right)(100)/\left(Wvoc_{c,i}\right) \qquad (Eq.\ A\text{-}4)$$

Where:

$Pvoc_{pan,i}$ = Percent of VOC for coating, i, or composite percent of VOC for the group of coatings including coating, i, associated with the coating solids deposited on the panel that remains on the wet panel when the wet panel leaves the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested, percent.

$P_{m,i}$ = Mass of VOC (from coating, i, or from the coating representing coating, i, in the panel test) remaining on the wet panel when the wet panel leaves the controlled spray booth zone or group of contiguous controlled spray booth zones being tested per mass of coating solids deposited on the panel, grams of VOC remaining per gram of coating solids deposited.

$W_{s,i}$ = Mass fraction of coating solids for coating, i, or average mass fraction of coating solids for the group of coatings including coating, i, grams coating solids per gram coating, determined by Method 24 (appendix A to 40 CFR part 60) or by following the guidelines for combining analytical VOC content and formulation solvent content presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).

$Wvoc_{c,i}$ = Mass fraction of VOC in coating, i, or average mass fraction of VOC for the group of coatings including coating, i, grams VOC per grams coating, determined by Method 24 (appendix A to 40 CFR part 60) or the guidelines for combining analytical VOC content and formulation solvent content presented in “Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,” EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).

4.3 The percent of VOC for coating, i, or composite percent of VOC for the group of coatings including coating, i, associated with the coating sprayed in the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested that is captured in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, $CE_{zone,i}$ (percent), is calculated using Equation A–5.

$$CE_{zone,i} = 100 - Pvoc_{pan,i} \qquad (Eq.\ A\text{-}5)$$

Where:

$CE_{zone,i}$ = Capture efficiency for coating, i, or for the group of coatings including coating, i, in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested as a percentage of the

VOC in the coating, i, or of the group of coatings including coating, i, sprayed in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, percent.

4.4 Calculate the percent of VOC for coating, i, or composite percent of VOC for the group of coatings including coating, i, associated with the entire volume of coating, i, or with the total volume of all of the coatings grouped with coating, i, sprayed in the entire spray booth that is captured in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, using Equation A–6. The volume of coating, i, or of the group of coatings including coating, i, sprayed in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, and the volume of coating, i, or of the group of coatings including coating, i, sprayed in the entire spray booth may be determined from gun on times and fluid flow rates or from direct measurements of coating usage.

$$CE_i = \left(CE_{zone,i}\right)\left(V_{zone,i}\right)/\left(V_{booth,i}\right) \qquad S(Eq.\ A\text{-}6)$$

Where:

CE_i = Capture efficiency for coating, i, or for the group of coatings including coating, i, in the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested as a percentage of the VOC in the coating, i, or of the group of coatings including coating, i, sprayed in the entire spray booth in which the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested, percent.

$V_{zone,i}$ = Volume of coating, i, or of the group of coatings including coating, i, sprayed in the controlled spray booth zone or group of contiguous controlled spray booth zones being tested, liters.

$V_{booth,i}$ = Volume of coating, i, or of the group of coatings including coating, i, sprayed in the entire spray booth containing the controlled spray booth zone (or group of contiguous controlled spray booth zones) being tested, liters.

4.5 If you conduct multiple panel tests for the same coating or same group of coatings in the same spray booth (either because the coating or group of coatings is controlled in non-contiguous zones of the spray booth, or because you choose to conduct separate panel tests for contiguous controlled spray booth zones), then you may add the result from section 4.4 for each such panel test to get the total capture efficiency for the coating or group of coatings over all of the controlled zones in the spray booth for the coating or group of coatings.

SECTION E.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) Electrodeposition Coating of Vehicle Bodies and Chassis (ED Coating Line), identified as Unit 001, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) ED Body Pretreatment area;

(2) One (1) ED Pretreatment Drying Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 5.55 MMBtu/hr;

(3) One (1) insignificant boiler for paint temperature control, with a heat input capacity of 4.0 MMBtu/hr;

(4) Two (2) insignificant pretreatment boilers for warming water surrounding the ED Body Coating Tank, each with a heat input capacity of 1.045 MMBtu/hr;

(5) One (1) ED Body Coating Tank, utilizing dipping as the method of application;

(6) One (1) ED Body Oven, with five (5) natural gas-fired burners totaling 13.7 MMBtu/hr, using a 1.5 MMBtu/hr natural gas-fired catalytic oxidizer (B-ED) as VOC control, and exhausting to one (1) stack, identified as B-ED Inc. (emissions from the entrance to, and exit from, the ED Body Oven use no controls and exhaust to one (1) stack, identified as B-ED Hood Exhaust); and

(7) One (1) ED Body Cool Down area;

(c) Topcoat System, identified as Unit 003, with a capacity of 60 units per hour, constructed in 1989, and modified in 2006 and 2008 consisting of the following units:

(1) One (1) Topcoat #1 Booth, utilizing electrostatic air atomized, electrostatic bell method of application, and robotic bells and automatic spray applicators, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC1-1 through TC1-10. One (1) natural gas-fired dry off oven, between the basecoat and clearcoat zones, with a heat input capacity of 5 MMBtu/hr.

(2) One (1) Topcoat #1 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(3) One (1) Topcoat #1 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(4) One (1) Topcoat #1 Oven, with three (3) insignificant natural gas-fired burners, using a 3.0 MMBtu/hr natural gas-fired catalytic incinerator (TC-1) as VOC control, and exhausting to one (1) stack, identified as TC-1 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-1 Ex.);

(5) One (1) Topcoat #1 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-1 O.Cl.;

(6) One (1) Topcoat #2 Booth, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to ten (10) stacks, identified as TC2-1 through TC2-10. One (1) natural gas-fired dry off oven between the base coat and clear coat zones with a heat input capacity of 8 MMBtu/hr;

Facility Description [326 IAC 2-7-5(15)]: (continued)

(7) One (1) Topcoat #2 Booth Preheat, with three (3) natural gas-fired burners, each with a heat input capacity of 20.57 MMBtu/hr;

(8) One (1) Topcoat #2 Booth Reheat, with three (3) insignificant natural gas-fired burners;

(9) One (1) Topcoat #2 Oven, with three (3) insignificant natural gas-fired burners, using a 1.5 MMBtu/hr natural gas-fired catalytic incinerator (TC-2) as VOC control, and exhausting to one (1) stack, identified as TC-2 Inc. (emissions from the entrance to and exit from the Topcoat #1 Oven use no controls and exhaust to one (1) stack, identified as TC-2 Ex.);

(10) One (1) Topcoat #2 Cool Down area, using no controls, and exhausting to one (1) stack, identified as TC-2 O.Cl.;

(11) One (1) Topcoat Booth #3, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to five (5) stacks, identified as TUT-1 through TUT-5;

(12) One (1) Topcoat Booth #3 Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 16.26 MMBtu/hr;

(13) One (1) Topcoat Booth #3 Reheat, with one (1) insignificant natural gas-fired burner;

(14) One (1) Topcoat Booth #3 Oven, with three (3) insignificant natural gas-fired burners, using a 2.5 MMBtu/hr natural gas-fired catalytic incinerator (TUT) as VOC control, and exhausting to one (1) stack, identified as TUT-O-1-2;

(15) One (1) Topcoat Booth #3 Cool Down area;

(d) Intermediate (Surfacer) Coating Line, identified as Unit 004, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) Intermediate Working Stage burner, with a heat input capacity of 19.74 MMBtu/hr;

(2) One (1) Intermediate Coating Booth, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to six (6) stacks, identified as SUR-2 through SUR-7;

(3) One (1) Intermediate Booth Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 28.275 MMBtu/hr;

(4) One (1) Intermediate Booth Reheat burner, with two (2) insignificant natural gas-fired burners;

(5) One (1) Intermediate Coating Oven, with five (5) insignificant natural gas-fired burners totaling 12.42 MMBtu/hr, using a 1.0 MMBtu/hr natural gas-fired catalytic incinerator (SUR) as VOC control, and exhausting to one (1) stack, identified as SUR-1 (emissions from the entrance to and exit from the Intermediate Coating Oven use no controls and exhaust to one (1) stack, identified as Surfacer Hood Exhaust); and

Facility Description [326 IAC 2-7-5(15)]: (continued)

(6) One (1) Intermediate Cool Down area, using no controls, and exhausting to one (1) stack, identified as Surfacer Cooling.

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

E.2.1 General Provisions Relating to NSPS MM [326 IAC 12-1] [40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A _ General Provisions, which are incorporated as 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart MM.

E.2.2 Automobiles and Light-Duty Trucks NSPS [40 CFR Part 60, Subpart MM]

The Permittee which engages in automobiles and light duty trucks production shall comply with the provisions of 40 CFR Part 60, Subpart MM, as follows:

§ 60.390 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in an automobile or light-duty truck assembly plant: each prime coat operation, each guide coat operation, and each topcoat operation.

(b) Exempted from the provisions of this subpart are operations used to coat plastic body components or all-plastic automobile or light-duty truck bodies on separate coating lines. The attachment of plastic body parts to a metal body before the body is coated does not cause the metal body coating operation to be exempted.

(c) The provisions of this subpart apply to any affected facility identified in paragraph (a) of this section that begins construction, reconstruction, or modification after October 5, 1979.

§ 60.391 Definitions

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

Applied coating solids means the volume of dried or cured coating solids which is deposited and remains on the surface of the automobile or light-duty truck body.

Automobile means a motor vehicle capable of carrying no more than 12 passengers.

Automobile and light-duty truck body means the exterior surface of an automobile or light-duty truck including hoods, fenders, cargo boxes, doors, and grill opening panels.

Bake oven means a device that uses heat to dry or cure coatings.

Electrodeposition (EDP) means a method of applying a prime coat by which the automobile or light-duty truck body is submerged in a tank filled with coating material and an electrical field is used to effect the deposition of the coating material on the body.

Electrostatic spray application means a spray application method that uses an electrical potential to increase the transfer efficiency of the coating solids. Electrostatic spray application can be used for prime coat, guide coat, or topcoat operations.

Flash-off area means the structure on automobile and light-duty truck assembly lines between the coating application system (dip tank or spray booth) and the bake oven.

Guide coat operation means the guide coat spray booth, flash-off area and bake oven(s) which are used to apply and dry or cure a surface coating between the prime coat and topcoat operation on the components of automobile and light-duty truck bodies.

Light-duty truck means any motor vehicle rated at 3,850 kilograms gross vehicle weight or less, designed mainly to transport property.

Plastic body means an automobile or light-duty truck body constructed of synthetic organic material.

Plastic body component means any component of an automobile or light-duty truck exterior surface constructed of synthetic organic material.

Prime coat operation means the prime coat spray booth or dip tank, flash-off area, and bake oven(s) which are used to apply and dry or cure the initial coating on components of automobile or light-duty truck bodies.

Purge or line purge means the coating material expelled from the spray system when clearing it.

Solids Turnover Ratio (RT) means the ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

Solvent-borne means a coating which contains five percent or less water by weight in its volatile fraction.

Spray application means a method of applying coatings by atomizing the coating material and directing the atomized material toward the part to be coated. Spray applications can be used for prime coat, guide coat, and topcoat operations.

Spray booth means a structure housing automatic or manual spray application equipment where prime coat, guide coat, or topcoat is applied to components of automobile or light-duty truck bodies.

Surface coating operation means any prime coat, guide coat, or topcoat operation on an automobile or light-duty truck surface coating line.

Topcoat operation means the topcoat spray booth, flash-off area, and bake oven(s) which are used to apply and dry or cure the final coating(s) on components of automobile and light-duty truck bodies.

Transfer efficiency means the ratio of the amount of coating solids transferred onto the surface of a part or product to the total amount of coating solids used.

VOC content means all volatile organic compounds that are in a coating expressed as kilograms of VOC per liter of coating solids.

Volume Design Capacity of EDP System (LE) means the total liquid volume that is contained in the EDP system (tank, pumps, recirculating lines, filters, etc.) at its designed liquid operating level.

Waterborne or water reducible means a coating which contains more than five weight percent water in its volatile fraction.

(b) The nomenclature used in this subpart has the following meanings:

Caj=concentration of VOC (as carbon) in the effluent gas flowing through stack (j) leaving the control device (parts per million by volume),

Cbi=concentration of VOC (as carbon) in the effluent gas flowing through stack (i) entering the control device (parts per million by volume),

Cfk=concentration of VOC (as carbon) in the effluent gas flowing through exhaust stack (k) not entering the control device (parts per million by volume),

Dci=density of each coating (i) as received (kilograms per liter),

Ddj=density of each type VOC dilution solvent (j) added to the coatings, as received (kilograms per liter),

Dr=density of VOC recovered from an affected facility (kilograms per liter),

E=VOC destruction or removal efficiency of the control device,

F=fraction of total VOC which is emitted by an affected facility that enters the control device,

G=volume weighted average mass of VOC per volume of applied solids (kilograms per liter),

Lci=volume of each coating (i) consumed, as received (liters),

Lcil = Volume of each coating (i) consumed by each application method (l), as received (liters),

Ldj=volume of each type VOC dilution solvent (j) added to the coatings, as received (liters),

Lr=volume of VOC recovered from an affected facility (liters),

Ls=volume of solids in coatings consumed (liters),

LE=the total volume of the EDP system (liters),

Md=total mass of VOC in dilution solvent (kilograms),

M0=total mass of VOC in coatings as received (kilograms),

Mr=total mass of VOC recovered from an affected facility (kilograms),

N=volume weighted average mass of VOC per volume of applied coating solids after the control device

$$\frac{kilograms\ of\ VOC}{liter\ of\ applied\ solids},$$

Qaj=volumetric flow rate of the effluent gas flowing through stack (j) leaving the control device (dry standard cubic meters per hour),

Qbi=volumetric flow rate of the effluent gas flowing through stack (i) entering the control device (dry standard cubic meters per hour),

Qfk=volumetric flow rate of the effluent gas flowing through exhaust stack (k) not entering the control device (dry standard cubic meters per hour), T=overall transfer efficiency,

Tl=transfer efficiency for application method (l),

Vsi=proportion of solids by volume in each coating (i) as received

$$\frac{liter\ solids}{liter\ coating}, and$$

Woi=proportion of VOC by weight in each coating (i), as received

$$\frac{kilograms\ VOC}{kilograms\ coating}$$

§ 60.392 Standards for volatile organic compounds

On and after the date on which the initial performance test required by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility VOC emissions in excess of:

(a) Prime Coat Operation.

(1) For each EDP prime coat operation:

(i) 0.17 kilogram of VOC per liter of applied coating solids when RT is 0.16 or greater.

(ii) 0.17×350 (0.160–RT) kg of VOC per liter of applied coating solids when RT is greater than or equal to 0.040 and less than 0.160.

(iii) When RT is less than 0.040, there is no emission limit.

(2) For each nonelectrodeposition prime coat operation: 0.17 kilogram of VOC per liter of applied coating solids.

(b) 1.40 kilograms of VOC per liter of applied coating solids from each guide coat operation.

(c) 1.47 kilograms of VOC per liter of applied coating solids from each topcoat operation.

§ 60.393 Performance test and compliance provisions

(a) Section 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test in accordance with §60.8(a) and thereafter for each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining the monthly volume weighted average mass of VOC emitted per volume of applied coating solids.

(1) The owner or operator shall use the following procedures for each affected facility which does not use a capture system and a control device to comply with the applicable emission limit specified under §60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids for each calendar month for each affected facility. The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or from data determined by an analysis of each coating, as received, by Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine data used in the calculation of the VOC content of coatings by Method 24 or an equivalent or alternative method. The owner or operator shall determine from company records on a monthly basis the volume of coating consumed, as received, and the mass of solvent used for thinning purposes. The volume weighted average of the total mass of VOC per volume of coating solids used each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC used in each calendar month for each affected facility by the following equation where "n" is the total number of coatings used and "m" is the total number of VOC solvents used:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

[ΣLdjDdj will be zero if no VOC solvent is added to the coatings, as received].

(B) Calculate the total volume of coating solids used in each calendar month for each affected facility by the following equation where "n" is the total number of coatings used:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

(C) Select the appropriate transfer efficiency (T) from the following tables for each surface coating operation:

Application method	Transfer Efficiency
Air Atomized Spray (waterborne coating)	0.39
Air Atomized Spray (solvent-borne coating)	0.50
Manual Electrostatic Spray	0.75
Automatic Electrostatic Spray	0.95
Electrodeposition.	1.00

The values in the table above represent an overall system efficiency which includes a total capture of purge. If a spray system uses line purging after each vehicle and does not collect any of the purge material, the following table shall be used:

Application method	Transfer Efficiency
Air Atomized Spray (waterborne coating)	0.30
Air Atomized Spray (solvent-borne coating)	0.40
Manual Electrostatic Spray	0.62
Automatic Electrostatic Spray	0.75

If the owner or operator can justify to the Administrator's satisfaction that other values for transfer efficiencies are appropriate, the Administrator will approve their use on a case-by-case basis.

(1) When more than one application method (l) is used on an individual surface coating operation, the owner or operator shall perform an analysis to determine an average transfer efficiency by the following equation where “n” is the total number of coatings used and “p” is the total number of application methods:

$$T = \frac{\sum_{i=1}^{n} T_l V_{si} L_{cil}}{\sum_{l=1}^{p} L_s}$$

(D) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T}$$

(E) For each EDP prime coat operation, calculate the turnover ratio (RT) by the following equation:

$$R_T = \frac{L_S}{L_E}, \text{ truncated after 3 decimal places.}$$

Then calculate or select the appropriate limit according to §60.392(a).

(ii) If the volume weighted average mass of VOC per volume of applied coating solids (G), calculated on a calendar month basis, is less than or equal to the applicable emission limit specified in §60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purpose of this subpart.

(2) The owner or operator shall use the following procedures for each affected facility which uses a capture system and a control device that destroys VOC (e.g., incinerator) to comply with the applicable emission limit specified under §60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility as described under §60.393(c)(1)(i).

(ii) Calculate the volume weighted average mass of VOC per volume of applied solids emitted after the control device, by the following equation: N=G[1–FE]

(A) Determine the fraction of total VOC which is emitted by an affected facility that enters the control device by using the following equation where “n” is the total number of stacks entering the control device and “p” is the total number of stacks not connected to the control device:

$$\sum_{i=1}^{n}$$

If the owner can justify to the Administrator's satisfaction that another method will give comparable results, the Administrator will approve its use on a case-by-case basis.

(1) In subsequent months, the owner or operator shall use the most recently determined capture fraction for the performance test.

(B) Determines the destruction efficiency of the control device using values of the volumetric flow rate of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation where “n” is the total number of stacks entering the control device and “m” is the total number of stacks leaving the control device:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

(2) In subsequent months, the owner or operator shall use the most recently determined VOC destruction efficiency for the performance test.

(C) If an emission control device controls the emissions from more than one affected facility, the owner or operator shall measure the VOC concentration (Cbi) in the effluent gas entering the control device (in parts per million by volume) and the volumetric flow rate (Qbi) of the effluent gas (in dry standard cubic meters per hour) entering the device through each stack. The destruction or removal efficiency determined using these data shall be applied to each affected facility served by the control device.

(iii) If the volume weighted average mass of VOC per volume of applied solids emitted after the control device (N) calculated on a calendar month basis is less than or equal to the applicable emission limit specified in §60.392, the affected facility is in compliance. Each monthly calculation is a performance **test for the purposes of this subpart.**

§ 60.394 Monitoring of emissions and operations.

The owner or operator of an affected facility which uses an incinerator to comply with the emission limits specified under §60.392 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(a) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(b) Each temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±5 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(c) Each temperature measurement device shall be equipped with a recording device so that a permanent record is produced.

§ 60.395 Reporting and recordkeeping requirements.

(a) Each owner or operator of an affected facility shall include the data outlined in paragraphs (a)(1) and (2) in the initial compliance report required by §60.8.

(1) The owner or operator shall report the volume weighted average mass of VOC per volume of applied coating solids for each affected facility.

(2) Where compliance is achieved through the use of incineration, the owner or operator shall include the following additional data in the control device initial performance test required by §60.8(a) or subsequent performance tests at which destruction efficiency is determined: the combustion temperature (or the gas temperature upstream and downstream of the catalyst bed), the total mass of VOC per volume of applied coating solids before and after the incinerator, capture efficiency, the destruction efficiency of the incinerator used to attain compliance with the applicable emission limit specified in §60.392 and a description of the method used to establish the fraction of VOC captured and sent to the control device.

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under §60.392. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually. Where compliance is achieved through the use of a capture system and control device, the volume-weighted average after the control device should be reported.

(c) Where compliance with §60.392 is achieved through the use of incineration, the owner or operator shall continuously record the incinerator combustion temperature during coating operations for thermal incineration or the gas temperature upstream and downstream of the incinerator catalyst bed during coating operations for catalytic incineration. The owner or operator shall submit a written report at the frequency specified in §60.7(c) and as defined below.

(1) For thermal incinerators, every three-hour period shall be reported during which the average temperature measured is more than 28 °C less than the average temperature during the most recent control device performance test at which the destruction efficiency was determined as specified under §60.393.

(2) For catalytic incinerators, every three-hour period shall be reported during which the average temperature immediately before the catalyst bed, when the coating system is operational, is more than 28 °C less than the average temperature immediately before the catalyst bed during the most recent control device performance test at which destruction efficiency was determined as specified under §60.393. In addition, every three-hour period shall be reported each quarter during which the average temperature difference across the catalyst bed when the coating system is operational is less than 80 percent of the average temperature difference of the device during the most recent control device performance test at which destruction efficiency was determined as specified under §60.393.

(3) For thermal and catalytic incinerators, if no such periods occur, the owner or operator shall submit a negative report.

(d) The owner or operator shall notify the Administrator 30 days in advance of any test by Method 25.

§ 60.396 Reference methods and procedures.

(a) The reference methods in appendix A to this part, except as provided in §60.8 shall be used to conduct performance tests.

(1) Method 24 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the data used in the calculation of the VOC content of the coatings used for each affected facility. Manufacturers' formulation data is approved by the Administrator as an alternative method to Method 24. In the event of dispute, Method 24 shall be the referee method.

(2) Method 25 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the VOC concentration in the effluent gas entering and leaving the emission control device for each stack equipped with an emission control device and in the effluent gas leaving each stack not equipped with a control device.

(3) The following methods shall be used to determine the volumetric flow rate in the effluent gas in a stack:

(i) Method 1 for sample and velocity traverses,

(ii) Method 2 for velocity and volumetric flow rate,

(iii) Method 3 for gas analysis, and

(iv) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-liter sample taken in a 1-liter container.

(c) For Method 25, the sampling time for each of three runs must be at least one hour. The minimum sample volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The Administrator will approve the sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

§ 60.397 Modifications.

The following physical or operational changes are not, by themselves, considered modifications of existing facilities:

(a) Changes as a result of model year changeovers or switches to larger cars.

(b) Changes in the application of the coatings to increase coating film thickness.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT
CERTIFICATION

Source Name:	Subaru of Indiana Automotive, Inc.
Source Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.:	T157-5906-00050

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 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:	Subaru of Indiana Automotive, Inc.
Source Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.:	T157-5906-00050

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 Describe:
Type of Pollutants Emitted: TSP, PM-10, SO2, VOC, NOX, 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: ______________________________

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Natural gas combustion units
Parameter: NOx, PM
Limit: Less than 2,380 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ___________YEAR:___________________

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage for Past 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Source-wide
Parameter: # vehicles produced
Limit: Less than 310,000 vehicles per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: ___________YEAR:________

Month	Vehicle Production This Month(# vehicles)	Vehicle Production for Past 11 Months (# vehicles)	Total Vehicle Production for 12 Month Period (# vehicles)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name:	Subaru of Indiana Automotive, Inc.
Source Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.:	T157-5906-00050
Facility:	Source-wide surface coating operations, associated purge solvent operations and wiping/cleaning solvents, and storage
Parameter:	VOC
Limit:	Shall not exceed 1,084.5 tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ___________YEAR:

Month	VOC Emissions This Month (tons)	VOC Emissions for Past 11 Months (tons)	VOC Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name:	Subaru of Indiana Automotive, Inc.
Source Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.:	T157-5906-00050
Facility:	PVC #1 Coating Booth, Topcoat #1 Coating Booth, Topcoat #2 Coating Booth, Topcoat Booth #3, Intermediate (Surfacer) Coating Booth, Plastic Bumper Coating Booth, Black Coat and Wax Coating Booth, Anticorrosion Coating Booth, Touchup Trim Coating Booth, Touchup IPC Coating Booth, source-wide natural gas combustion, and all insignificant facilities that were permitted by the PSD (79) 1651 Revision.
Parameter:	PM
Limit:	Less than 23.1 tons PM/PM10 per twelve (12) consecutive month period with compliance determined at the end of each month, using the equation contained in Condition D.1.4 of this permit.

QUARTER: _________YEAR:_______

Month	PM/PM10 Emissions This Month (tons)	PM/PM10 Emissions for Past 11 Months (tons)	PM/PM10 Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name:	Subaru of Indiana Automotive, Inc.
Source Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address:	5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.:	T157-5906-00050
Facility:	Natural gas combustion units associated with the Fascia Paint Line and the 5 MMBtu/hr dry off oven added to the existing Topcoat, Unit 003.
Parameter:	VOC
Limit:	Shall not exceed 166.4 million cubic feet per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: _____________YEAR:___________________

FORM 1

Month	Natural Gas Usage This Month (MMCF)	Natural Gas Usage for Past 11 Months (MMCF)	Total Natural Gas Usage for 12 Month Period (MMCF)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Fascia Paint Line (PFPLS#2), wiping/cleaning solvents, and solvent purging
Parameter: VOC
Limit: Entire Fascia Line including purge solvent and wiping/cleaning solvents shall not exceed 102.1 tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.
Purge solvent and wiping/cleaning solvents shall not exceed 24.2 tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER ___________YEAR ___________

FORM 2

Month	Total VOC Emissions This Month (tons)	Total VOC Emissions for Past 11 Months (tons)	Total VOC Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Month	Purge Solvents				Purge Solvents				Purge Solvents			
	Solvent Usage for This Month (gallons)	Captured/ Collected This Month (gallons)	Wiping/ Cleaning Solvent Used This Month (gallons)	Total VOC Emitted This Month	Solvent Usage for Past 11 Months (gallons)	Captured/ Collected for Past 11 Months (gallons)	Wiping/ Cleaning Solvent Used Past 11 Months (gallons)	Total VOC Emitted for Past 11 Months	Solvent Usage for 12 Month Period (gallons)	Captured/ Collected for 12 Month Period (gallons)	Wiping/ Cleaning Solvent Used Past 11 Months (gallons)	Total VOC Emitted for 12 Month Period
Month 1												
Month 2												
Month 3												

Note: VOC emissions from the fascia paint line on this report (FORM 2), combined with the VOC emissions from the natural gas combustion devices on FORM 1 shall not exceed 102.6 tons per year.

Submitted by:____________________ Date: ________________________
Title / Position:____________________ Phone: ________________________
Signature:________________________Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Topcoat System, identified as Unit 003
Parameter: VOC
Limit: Shall not exceed 393 tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ___________YEAR:

Month	VOC Emissions This Month (tons)	VOC Emissions for Past 11 Months (tons)	VOC Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Submitted by: _______________________________________

Title / Position: _______________________________________

Signature: _______________________________________

Date: _______________________________________

Phone: _______________________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Monthly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: ED Coating Line, Unit 001
Parameter: Actual VOC Content
Daily Limit: ED Coating Line - 0.4 pounds of VOC/gallon of applied coating solids (lb/gacs); on a daily basis

Month: ____________________ Year: ________________

Day	Daily VOC Usage (lb/gacs)	Day	Daily VOC Usage (lb/gacs)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Monthly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: Topcoat #1 Booth, Topcoat #2 Booth, Topcoat #3 Booth, Intermediate Coating Booth
Parameter: Actual VOC Content
Limits: For Combined Topcoat #1 Booth, Topcoat #2 Booth - 12.3 pounds of VOC/gallon of applied coating solids (lb/gacs); based on a daily volume weighted average.
For Topcoat #3 Booth – 10.6 lbs/gacs, based on a daily volume weighted average.
For Intermediate Coating Booth – 8.76 lbs/gacs, based on a daily volume weighted average.

Month: __________________ Year: _______________

Day	Combined Daily Volume Weighted Average VOC Usage for Topcoat #1 Booth, Topcoat #2 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Topcoat #3 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Intermediate Coating Booth (lbs/gacs)	Day	Combined Daily Volume Weighted Average VOC Usage for Topcoat #1 Booth, Topcoat #2 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Topcoat #3 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Intermediate Coating Booth (lbs/gacs)
1				17			
2				18			
3				19			
4				20			
5				21			
6				22			
7				23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			
16				no. of deviations			

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
Deviation has been reported on: __________________________

Submitted by: ________________________ Date: __________________________________
Title/Position: ________________________ Phone: __________________________________
Signature: ______________________________

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Quarterly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: Trim Line, Unit 010
Parameter: Actual VOC Content
Limits: For Trim Line, unit 010 window installation adhesives and other materials - 0.40 pounds of VOC per gallon of coating, as applied, based on a monthly volume weighted average

For all the other adhesives and sealers used in the Trim Line, unit 010, excluding window installation materials - 0.30 pounds of VOC per gallon of coating, as applied based on a monthly volume weighted average

Quarter: ________________ Year: ______________

Operation	Month 1: _________ Volume Weighted Average VOC Usage (pounds of VOC/gallon as applied)	Month 2: _________ Volume Weighted Average VOC Usage (pounds of VOC/gallon as applied)	Month 3: _________ Volume Weighted Average VOC Usage (pounds of VOC/gallon as applied)
Trim Line - Unit 010 Window Installation Adhesives			
Trim Line, unit 010- All Other Adhesives Excluding Window Installation Adhesives			

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Monthly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: Sealing and PVC Undercoating Line, identified as Unit 002 (PVC Coating Booths #1 and #2)
Parameter: Actual VOC Content
Limit: Sealing and PVC Undercoating Line, Unit 002 (PVC Coating Booths #1 and #2) – 0.30 lbs/gacs, based on a daily volume weighted average

Month: ________________ Year: ______________

Day	Daily Volume Weighted Average VOC Usage for Sealing and PVC Undercoating Line, Unit 002 (lbs/gacs)	Day	Daily Volume Weighted Average VOC Usage for Sealing and PVC Undercoating Line, Unit 002 (lbs/gacs)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Monthly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: PBL Coating Booth
Parameter: Actual VOC Content
Limit: PBL Coating Booth – 38.2 lbs/gacs, based on a daily volume weighted average

Month: ________________ Year: ______________

Day	Daily Volume Weighted Average VOC Usage for PBL Coating Booth (lbs/gacs)	Day	Daily Volume Weighted Average VOC Usage for PBL Coating Booth (lbs/gacs)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
Deviation has been reported on: ________________________

Submitted by: ____
Title/Position: ____
Signature: ____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050

Months: ___________ to ____________ Year: ______________

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked “No deviations occurred this reporting period”.	
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD	
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: ____________________________________

Submitted by: ____

Title / Position: _____________________________________

Date:____

Phone: ____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for a PSD Significant Source Modification

Source Name:	Subaru of Indiana Automotive, Inc.
Source Location:	5500 State Road 38 East, Lafayette, IN 47905
County:	Tippecanoe
SIC Code:	3711
Operation Permit No.:	157-5906-00050
Operation Permit Issuance Date:	June 28, 2004
PSD/Significant Source Modification No.:	157-29566-00050
Permit Reviewer:	Aida De Guzman

On November 11, 2010, the Office of Air Quality (OAQ) had a notice published in Tippecanoe, Indiana stating that Subaru of Indiana Automotive, Inc. applied for a significant source modification and a significant permit modification to its Part 70 Operating Permit. These permits will allow Subaru of Indiana Automotive, Inc. to increase its production from 262,000 vehicles per year to 310,000 vehicles per year.

The notice also stated that OAQ proposed to issue permits for this change and provided information on how the public could review the proposed permits and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not these permits should be issued as proposed.

On December 17, 2010, the EPA Region 5 made the following comments to the draft permits. Additions are **bolded** and deletions are ~~struck-through~~ for emphasis:

Comment 1:

Check letters in facility description boxes in D section, they do not seem to be in any particular order, some are missing.

Response 1:

The facilities in the descriptions boxes in Section Ds are not numbered in sequence but rather were identified to match the numbering system in Sections A.2 and A.3 of the permit. Therefore, no changes have been made to the proposed permits as a result of this comment.

Comment 2:

For sections that state a required capture efficiency and destruction efficiency, how will compliance with those efficiencies be established and monitored? There are testing requirements to verify overall efficiency, however that is not a listed requirement. If these efficiencies are to be calculated using test results, that is not discussed nor is the methodology for the calculation discussed in the TSD or Permit.

Response 2:

Condition D.3.5(a), Plastic fascia Paint Line – The Automobile and Light-Duty Trucks Manufacturing companies are required to follow the guidelines presented in the "Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22). This protocol is also one of the options in NESHAP, Subpart IIII (Surface Coating of Automobiles and Light-Duty Trucks) for determining capture efficiency of booths' flash-off or bake oven emissions. This protocol includes the requirement for deriving the VOC capture efficiency of the Topcoat booths in cases where VOCs are not captured by a capture system and not controlled by a control device. Records of all data input to this protocol must be maintained onsite. This protocol can also be used to derive the capture efficiency of the Fascia Paint Line VOC flash-off (Condition D.3.5(a)).

Condition D.4.1(a) 3rd paragraph – ED Coat
There is no specific testing protocol for determining the capture efficency for electrodeposition system that does not have a total enclosure. Due to the nature of a dipping operation, a majority of the VOC content of a coating is not released until it reaches the curing oven. Therefore, to demonstrate compliance with the VOC limit which accounts for the capture efficiency of 70%, the Permittee shall utilize the procedure in 40 CFR Subpart MM – NSPS for Automobile and Light-Duty Truck Surface Coating Operations.

EPA's Comment 2 would not apply to Condition D.2.1(d) and Condition D.4.1(a) 1st paragraph. These conditions are currently on appeal, since the 20% capture efficiency was not part of the original PSD BACT required in PSD (79) 1651, issued on July 30, 1987 and Revision to PSD (79) 1651, issued on July 26, 1989. Its inclusion was made when the Part 70 Operating Permit No. 157-5906-00050 was issued on June 28, 2004 without re-evaluating the BACT (see Page 12 of 35, 2nd paragraph of the TSD to this Part 70 Operating Permit). In addition, the affected Plastic Bumper and Topcoat #1 Booth, Topcoat #2 Booth and Intermediate Coating Booth in these conditions were not physically modified or affected by this permitting action. Therefore, the capture efficiency requirement in these conditions will be addressed and removed in the separately pending Part 70 Operating Permit Renewal.

The following conditions are revised as follows:

D.3.9 Volatile Organic Compounds (VOC)

(a) Compliance with the VOC content and usage limitations contained in Conditions D.3.5 and D.3.6 shall be determined pursuant to 326 IAC 8-1-4(a)(3) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedure specified in 326 IAC 8-1-4.

(b) In addition to the procedure in section (a) of this condition, compliance with the VOC limit for the solvent purging operation in Conditions D.3.5(b) and D.3.6 shall be determined through the following:

(1) Purge solvent usage and collection shall be monitored separately for the primer coating operations and clearcoat operations. For each of the primer and clearcoat coating systems, the Permittee shall install flow meters to monitor the volume of purge solvent delivered to the spray applicators, and the volume of the purge materials collected for recycling or disposal. The purge material collection/capture, as a percentage of purge solvent usage shall be determined on a monthly basis as follows:

$$\text{Purge Solvent Collection/Capture Efficiency} = \frac{S_c - R_{cs}}{P_u}$$

Where:

R_{cs} = Residual coating solids in the spray applicator
S_c = Purge material collected (paint solids + solvent)
P_u = Purge solvent usage

(**c**) **Compliance with Condition D.3.5(a), the capture efficiency shall be determined using the "Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22) or guidelines in 40 CFR § 63.3165**.

D.4.9 Volatile Organic Compounds (VOC) [326 IAC 8-1-2] [326 IAC 2-2]

***

(c) Compliance with Condition D.4.1(b) the capture efficiency for the ED Coating Line shall be determined using the procedure in 40 CFR Subpart MM – NSPS for Automobile and Light-Duty Truck Surface Coating Operations.

Comment 3:

Several sections reference "appropriate response steps" or "reasonable response steps" in accordance with Section C. Section C does not define "appropriate response steps" or "reasonable response steps" rather corrective action. Language should be consistent throughout the permit since these terms are undefined. Also, Section C does not specify what the appropriate corrective actions are or may be found, how is this condition enforceable? The permit in several places states that a parameter or limit exceedence is not considered a deviation of the permit, but failure to take response steps (reasonable or appropriate) shall be considered a deviation from this permit. The enforceability of these conditions is a concern.

Response 3:

IDEM recognizes the inconsistency issue to be a deficiency in the operating permit. As EPA's comment pertains to the operating approval and not to the construction approval, IDEM will proceed with issuance the PSD/SSM and fully respond to EPA's comment in Significant Permit Modification 157-29567-00050.

Comment 4:

Sections D.2.2, D.4.2, D.5.2 and D.6.2 all state BACT requirements for NOx, however there no means to show compliance with this limitation. There is no recordkeeping, monitoring or testing requirement establish compliance or show continuing compliance with this limit.

Response 4:

This permitting action (PSD/SSM 157-29566-00050) did not result in re-evaluation of the PSD BACT for NOx. In addition, the NOx PSD BACT for these small process heaters and oven burners are basically the emission factors for natural gas combustion. It was assumed that each NOx BACT limits are met since these combustion units are using natural gas for fuel and that this fuel heating value stays the same. Therefore, no changes have been made to the permit as a result of this comment.

Comment 5:

Will the increase in vehicles produced have an effect on the status of the vehicle test stands which are currently considered insignificant?

Response 5:

The Vehicle Test Stands will remain insignificant activities although there is an increase in production from 262,000 vehicle per year to 310,000 vehicle per year. These test stands were approved in Exemption No. 157-14536-00050 issued on October 10, 2001 with VOC emissions at 0.61 tons/year based upon the maximum capacity of the test stands at 525,600 engines per year.

Comment 6:

Please provide explanation for decrease in reporting frequency from monthly to quarterly.

Response 6:

Reporting Condition D.2.13, D.4.17 and D.6.11 have been changed back to the monthly reporting frequency. Changes are as follows:

D.2.13 Reporting Requirements

A ~~quarterly~~ **monthly** report of the daily VOC content of the coatings used, based on a volume weighted average from the PBL Coating Booth and ~~quarterly~~ **monthly** summary of the information to document the compliance status with Condition D.2.1, shall be submitted not later than thirty (30) days after the end of the ~~quarter~~ **month** being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

D.4.17 Reporting Requirements

A ~~quarterly~~ **monthly** report of the daily VOC content of the coatings used from the ED Coating Line, Topcoat #1 Booth, Topcoat #2 Booth, Topcoat Booth #3 and Intermediate Coating Booth and ~~quarterly~~ **monthly** summary of the information to document the compliance status with Conditions D.4.1 and D.4.6, shall be submitted not later than thirty (30) days after the end of the ~~quarter~~ **month** being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

D.6.11 Reporting Requirements

A ~~quarterly~~ **monthly** report of the daily VOC content of the coatings used, based on a volume weighted average from the Sealing and Undercoating Line and Anticorrosion Coating Booth and the ~~quarterly~~ **monthly** summary of the information to document the compliance status with Condition D.6.1, shall be submitted not later than thirty (30) days after the end of the ~~quarter~~ **month** being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

Comment 7:

Equations in Sections D.2.4, D.4.3, D.8.3 and D.8.4 should be corrected or double checked.

Response 7:

These corrections are due to formatting issue when the original document was converted to Word 2007. These conditions were corrected as follows:

D.2.4 Particulate Emissions from Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the two (2) 2.5 MMBtu/hour PBL flash zone heaters shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$Pt = \frac{1.09}{\mathbf{Q}^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.4.3 Particulate Emissions from Sources of Indirect Heating [326 IAC 6-2-4]

(a) Pursuant to 326 IAC 6-2-4, the particulate emissions from the one (1) insignificant 5.0-MMBtu/hr ED Chassis hot water boiler, the two (2) insignificant 1.045-MMBtu/hr ED Pretreatment boilers, and the one (1) insignificant 4.0-MMBtu/hr ED Paint Temperature Control boiler shall each not exceed 0.435 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr).

(b) Pursuant to 326 IAC 6-2-4, the particulate emissions from the 2.5 MMBtu/hour Topcoat #3 flash zone heater shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$Pt = \frac{1.09}{\mathbf{Q}^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.8.3 Particulate Matter from Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate matter emissions from the six (6) insignificant natural gas-fired general hot water boilers with a combined heat input capacity of 23.08 MMBtu/hr.

This limitation is based on the following equation:

~~Pt = 1.09~~
~~Q 0.26~~

$$\mathbf{Pt = \frac{1.09}{Q^{0.26}}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr).

D.8.4 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 and Exemption No. 157-14535-00050, issued on October 10, 2001, the allowable particulate emission rate from the insignificant metal machining of engine crankshaft in the engine manufacturing facility shall not exceed 1.03 pounds per hour when operating at a process weight rate of 0.128 tons per hour. This limit was calculated with the following equation:

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

~~E = 4.10 P0.67~~

$$\mathbf{E = 4.10\ P^{0.67}}$$

where E = rate of emission in pounds per hour;
and P = process weight rate in tons per hour.
= 14 kg/unit crankshaft * 6,000 units/mo
* 1 mo/30 days * 1 day/24 hr * 1 ton/907 kg
= 0.128 ton/hr

Comment 8:

D.2.12 (a) does not require any record keeping for duct pressure/amperage to show compliance with requirements of daily monitoring per D.2.10(b).

Response 8:

Condition D.2.12 has been revised to add the record keeping of the duct pressure and fan amperage.

D.2.12 Record Keeping Requirements

(a) To document compliance with Conditions D.2.1, D.2.9, and D.2.10, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.1, and the compliance determination requirements established in Conditions D.2.9, and D.2.10. 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 (as applied) and the VOC content of each solvent (including purge solvents and

thinners) used less water.

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(4) The volume weighted average VOC content of the coatings used (as applied) for each day.

(5) The continuous temperature records (on a three-hour average basis) for the thermal incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(6) Records of any thermal incinerator shutdowns due to duct pressure or fan amperage deviations.

(7) Daily records of the duct pressure or fan amperage.

(b) To document compliance with Condition D.2.11, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

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

D.3.15 Record Keeping Requirements

(a) To document compliance with Conditions D.3.5 and D.3.6, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.3.5 and D.3.6. 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 (as applied) and the VOC content of each solvent (including purge solvents and thinners).

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material, wiping/cleaning solvent, purge solvents used on a monthly basis, and amount of purge material (paint solids + solvent) captured and recycled on a 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 wiping/cleaning solvents, and those used as purge.

(4) The volume weighted average VOC emitted per gallon of the coatings used (as applied) for each day.

(5) The continuous temperature records (on a three-hour average basis) for the fascia paint line curing oven thermal oxidizer and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(6) Records of any thermal oxidizer shutdowns due to duct pressure or fan amperage deviations.

(7) Records of the natural gas fuel usage from the combustion units associated with the fascia paint line (PFPLS#2), and from the 5 MMBtu/hr heat flash added to the existing Topcoat, Unit 003.

(8) Daily records of the duct pressure or fan amperage.

(b) To document compliance with Condition D.3.13, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) All records shall be maintained and available upon a request for inspection by the IDEM, OAQ and shall be in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.16 Record Keeping Requirements

(a) To document the compliance status with Conditions D.4.1, D.4.4, D.4.5, and D.4.6, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.4.1, D.4.4, D.4.5, and D.4.6, and the compliance determination requirements established in Condition D.4.12. Records necessary to demonstrate the compliance status shall be available within not later than 30 days after the end of each compliance period.

(1) The VOC content of each coating material (as applied) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The VOC content of each coating material used in the ED Body Coating Tank, as applied, less water.

(3) The solids content of each coating material used (as applied).

(4) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(5) The volume weighted average VOC content of the coatings used (as applied) for each day.

(b) To document the compliance status with Conditions D.4.12 and D.4.13, the Permittee shall maintain the following records:

(1) The continuous temperature records (on a three-hour average basis) for each incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(2) Records of any catalytic incinerator shutdowns due to duct pressure or fan amperage deviations.

(3) The continuous inlet temperature to the catalyst bed of each catalytic incinerator.

(4) Daily records of the duct pressure or fan amperage.

(c) To document the compliance status with Condition D.4.14, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available not later than 1 hour after request for inspection by IDEM.

(d) To document the compliance status with Condition D.4.15, the Permittee shall maintain records of daily visual inspection of the water wash system, dates of any water wash warning system going off and corrective actions taken and log of semi-annual inspections of the Topcoat #1 Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5.

(e) Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

Comment 9:
Were any changes made to Section D.3? There are construction conditions listed, but nothing was included in TSD.

Response 9:

There are no changes made to the facilities in Section D.3. The Construction Conditions D.3.1 through D.3.4 are existing conditions that were required in SSM 157-22702-00050 as referenced in Condition D.3.4. These conditions will be deleted once the currently pending Part 70 Operating permit Renewal is issued.

Comment 10:

Sections D.3.5 and D.3.6 have requirements for both PSD Minor Limits and BACT, how are both PSD Minor and BACT applicable to these units?

Response 10:

Condition D.3.6 is not a PSD BACT requirement; it is a State BACT requirement under 326 IAC 8-1-6, where the potential VOC emission trigger level is 25 tons/year instead of 40 tons/year.

Comment 11:

Section D.3.6(a), will there be requirements for capture efficiency?

Response 11:

Based upon the BACT evaluation done for the Fascia Paint Line Curing Oven, the BACT established for this operation was only for destruction efficiency of the control device at 95%.

Comment 12:

Section D.4 there is no (b) in facility description box.

Response 12:

Please see similar Response 1.

Comment 13:

Section D.4.1(b), please explain the reduction in capture efficiency to incinerator from 70% to 20%. Also, just to clarify, the emissions from Topcoat #3 are directly routed to the catalytic incinerator.

Response 13:

IDEM has reviewed the most recent permit modification (MPM 157- 29385-00050) issued prior to this PSD/SSM 157-29566-00050, the capture efficiency of 20% has been at this level and has not been changed in this permitting action.

Comment 14:

Section D.4.11(a) Twotone should be replaced with Topcoat #3 Oven.

Response 14:

Condition D.4.11(a) has been changed as follows:

D.4.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within sixty (60) days after achieving maximum production rate but no later than one hundred and eighty (180) days after initial startup of the modified Topcoat System, the Permittee shall conduct a performance test to verify overall VOC control efficiency of the catalytic incinerator, TC-1 controlling Topcoat #1 Oven utilizing methods as approved by the Commissioner. The Permittee conducted a performance test in January 2006 to verify overall control of the catalytic oxidizer, TUT, controlling the ~~Twotone and Repair Oven~~ **Topcoat #3 Oven**.

Comment 15:

Section D.4.15, will requirements be put in place for warning system?

Response 15:

Condition D.4.15 has been revised by adding additional parameter that would be monitored for the warning alarm system.

D.4.15 Water Wash Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

(a) Daily visual inspections shall be made on each water wash flood pans and water circulation associated with the Topcoat #1 Booth, exhausting to nine (9) stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth, exhausting to ten (10) stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth, exhausting to five (5) stacks, identified as TUT1 through TUT-5 to verify the control system proper operation. A warning system shall be installed and operated to ensure that the water circulation pump is operational at all times when any of the following emission units are in operation: Topcoat #1 Booth, Topcoat #2 Booth, and Topcoat #3 Booth. **In addition, red strobe light shall automatically be activated whenever the water circulation pump is down and once a day visual observation of the warning system shall be conducted**. When a system warning is received, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

(b) Semi-annual inspections shall be performed of the coating emissions from the Topcoat #1 Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5 and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions or when evidence of overspray emission is observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Comment 16:

Section D.4.17, please explain change in requirement to less specific reporting.

Response 16:

Please See related **Response 6**.

Comment 17:

TSD for Section D.6 does not reflect addition of Sound Deadener.

Response 17:

That is correct, the Sound Deadener is not being added in this permitting action. This operation was permitted in Minor Source Modification No. 157-29395-00050, issued on August 31, 2010.

Comment 18:

Section D.6.1(a), the word "in" should be added after facility.

Response 18:

Condition D.6.1(a) has been revised as follows:

D.6.1 Volatile Organic Compounds (VOC) Best Available Control Technology [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following:

(a) The daily VOC emissions from each facility **in** the Sealing and PVC Undercoating Line, identified as Unit 002 shall not exceed the corresponding limits in the following table. Compliance with these limits shall be demonstrated pursuant to Condition D.6.7:

Comment 19:

Section D.6.7, how is compliance with transfer efficiency determined?

Response 19:

D.6.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2]

Compliance with the VOC emission limits in Conditions D.6.1 and D.6.3 shall be determined with the following equations (as applicable):

VOC emissions (lb VOC/gal coating solids) = [∑ (C x U) / ∑ U]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating solids as applied; and
U is the usage rate of the coating in gallons per day.

Or, if the emission limit is in units of pounds of VOC per gallon of coating less water:

VOC emissions (lb VOC/gal coating less water) = [∑ (C x U) / ∑ U]

Where:

C is the VOC content of the coating in pounds of VOC per gallon of coating less water as applied;
U is the usage rate of the coating in gallons per day

Or, if the emission limit is in units of pounds of VOC per gallon of applied coating solids (lb/gacs)

$$\mathbf{DWA} = \frac{\sum_{i=1}^{n} (C_i)(U_i)}{\sum_{i=1}^{n} (S_i \times TE)}$$

where:

DWA = daily calculated volume weighted average emissions in pounds per gallon coating solids.
C = VOC content of coating i, lb VOC/gal
U = actual coating i usage, gal/day
S = volume of solids in coating i consumed, gal/day
TE = transfer efficiency of the applicator, determine using the Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22).
n = no. of coatings used during the day

Comment 20:

Section D.6.9, does pressure gauge need to be calibrated on any regular frequency?

Response 20:

Condition D.6.9 has been revised to add the calibration of the pressure gauge.

D.6.9 Dry Filters Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

Dry filters shall be operated whenever the PVC Coating Booth #1 and PVC Coating Booth #2, Black and Wax coating Booth and Anticorrosion Coating Booth are in operation and shall be maintained in accordance with manufacturer's specification. Filters shall be changed on a monthly basis. Magnahelic pressure gauges shall be installed for continuous pressure monitoring and to detect whether filters need to be changed more frequently due to abnormal overspray loading. When the gauges indicate that a problem exists for the dry filter, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

Comment 21:

Section D.7, facility description box has two (l) listings.

Response 21:

Section D.7 has been revised as follows:

SECTION D.7 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(k) Trim Line, identified as Unit 010, application in the Body Shop and Trim Shop of adhesives and sealers to various vehicle parts, constructed in 1989.

(l) Three (3) storage tanks, identified collectively as Unit 011, and including the following equipment:

(1) Gasoline storage tank, with a capacity of 15,000 gallons, constructed in 1988,

using a certified vapor collection and control system;

(2) Purge thinner storage tank, with a capacity of 5,000 gallons, constructed in 1988, using a certified vapor collection and control system; and

(3) Waste purge thinner storage tank, with a capacity of 6,000 gallons, constructed in 1992.

(~~l~~**m**) Purge solvent recovery system, identified as Unit 012, with a maximum throughput of 168,000 gallons per year, constructed in 2001, and including the following equipment:

(1) Dirty purge Tank A, with a capacity of 1,096 gallons;

(2) Distillation overs Tank B, with a capacity of 1,096 gallons;

(3) Clean solvent Tank C, with a capacity of 1,096 gallons;

(4) Methanol Tank E, with a capacity of 1,096 gallons;

(5) Xylene Tank, with a capacity of 1,096 gallons;

(6) Acetone Tank, with a capacity of 1,096 gallons;

(7) Clean purge Tank OK, with a capacity of 1,949 gallons; and

(8) One (1) distillation unit.

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

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a PSD/Significant Source Modification to a Part 70 Source and a Significant Permit Modification to a Part 70 Operating Permit

Source Description and Location

Source Name:	Subaru of Indiana Automotive, Inc.
Source Location:	5500 State Road 38 East, Lafayette, Indiana 47905
County:	Tippecanoe
SIC Code:	3711
Operation Permit No.:	T 157-5906-00050
Operation Permit Issuance Date:	June 28, 2004
PSD/Significant Source Modification No.:	157- 29566-00050
Significant Permit Modification No.:	157-29567-00050
Permit Reviewer:	Aida De Guzman

Existing Approvals

The source was issued Part 70 Operating Permit No. 157-5906-00050 on June 28, 2004. The source has since received the following approvals:

(a) First Administrative Amendment No. 157-20396-00050, issued on February 22, 2005;

(b) First Significant Permit Modification No. 157-22703-00050, issued on August 2, 2006;

(c) Second Administrative Amendment No. 157-24783-00050, issued July 12, 2007;

(d) Third Administrative Amendment No. 157-25807-00050, issued on January 31, 2008;

(e) Fourth Administrative Amendment No. 157-27271-00050, issued on January 29, 2009;

(f) Fifth Administrative Amendment No. 157-28126-00050, issued on June 25, 2009;

(g) Sixth Administrative Amendment No. 157-29204-00050, issued on May 24, 2010; and

(h) First Minor Permit Modification No. 157-29395-00050, issued on August 31, 2010.

County Attainment Status

The source is located in Tippecanoe County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Tippecanoe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Tippecanoe County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for $PM_{2.5}$ emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants

Tippecanoe County has been classified as attainment or unclassifiable in Indiana for all the other critera pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, however, there is an applicable New Source Performance Standard that was in effect prior to August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	**Emissions** (ton/yr)
PM	26.33
PM_{10}	26.33
$PM_{2.5}$	26.33
SO_2	Negligible
VOC	1,173.02
CO	32.46
NO_X	38.03

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because an attainment pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

(b) This existing source is a major stationary source, under Part 70 Operating Permit Program (326 IAC 2-7), because VOC is emitted at a rate of 100 tons per year or more.

(c) These emissions are based upon the Technical Support Document for the most recent issued approval, Administrative Amendment No. 157-27271-00050.

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	**Potential To Emit** (ton/yr)
A single HAP (Pb)	>10
Total HAPs	>25

This existing source is a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Description of the Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Subaru of Indiana Automotive, Inc. on August 16, 2010, relating to increasing vehicle production of the plant from 262,000 vehicles per year to 310,000 vehicles per year. The following changes to the plant will be made to allow for this increase:

(a) Stamping Shop – involves the stamping of sheet metal using equipment capable of forming various components of a vehicle body (doors, roofs, fenders, hoods). The building is extended to accommodate the increase in production. This operation is listed as an insignificant activity. ' This operation emits particulate and the proposed project will not change its insignificant classification.

(b) Body Shop – The body shop utilizes variety of resistance welding and other equipment to merge the vehicle body components from the stamping shop to form the metal shell of the vehicle body. SIA is proposing to add storage capacity to the body shop in order to accommodate the increase in vehicle production**.** No physical modification to the existing equipment at the shop will be made. This operation emits particulate and the proposed project will not change its insignificant classification. The welding operation emits particulate and HAPs and the proposed project will not change its insignificant classification.

(c) Paint Shop –

(1) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001 – Current system is using waterborne technology with the oven controlled by a catalytic oxidation system. A physical change is being made to the oven staging/cool down area. Vehicles that come out of the oven typically enter this staging area where they continue to cool prior to moving on to the sealer deck. The number of vehicles in this staging area is the basis for what can be processed through the primary paint system. Currently, the staging area is not sufficiently large enough to hold enough vehicles to support the requested increase in production volumes.

No physical changes will occur to the ED system's dip/rinse tank or curing oven.

(2) Twotone and Repair Booth (part of the Topcoat Body Paint System) will be physically changed to allow for the application of waterborne basecoat and solventborne clearcoat materials. After the change, the Twotone Coating Line will be referred to as Topcoat #3.

(3) Three (3) natural gas-fired heaters for the heated flash zone systems each with a maximum heat input capacity of 2.5 MMBtu/hr to provide additional paint curing for the waterborne materials to be utilized in the Twotone and Bumper Systems.

(4) No physical changes will be made to the following operations although they will experience an increase in utilization as a result of the Project: Sealing and PVC Undercoating Line, ED Sand Operation, Intermediate (Surfacer) Coating Line, Blackout and Wax Operation, and the Plastic Fascia Coating Line.

(5) Trim Line, identified as Unit 010 – Increase conveyor's line speed to allow for an increase in the number of assembled units.

(d) Engine Assembly Facility – Changes to the buffer, storage and line speed will occur.

(e) Miscellaneous Support Functions – Various support functions, such as the paint mixing rooms, bulk storage tanks (i.e., gasoline tank, purge thinner tank and waste purge thinner tank), Purge Solvent Recovery Systems (excluding Plastic Bumper Paint Line System and Twotone Systems, where changes will be made to utilize waterborne materials in these two paint line systems) will not be physically changed to accommodate the increase in capacity. These support functions will however experience an increase in utilization.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Increase in PTE Before Controls of the Modification (New Emission Units)	
Pollutant	**Potential To Emit** (ton/yr)
PM	0.25
PM_{10}	0.25
$PM_{2.5}$	0.25
SO_2	0.02
VOC	0.18
CO	2.76
NO_X	3.29
Hexane	0.059
Total HAPs	0.062

Page 1 of 13 Appendix A of this TSD reflects the unrestricted potential emissions of the new emission units.

PTE Change of the Modified Process							
Pollutant	**PTE of Painting Operation Before Modification** (ton/yr) [1]	**PTE of Painting Operation After Modification** (ton/yr) [2]	**Increase from Painting Operation** (ton/yr)	**PTE of Combustion Units Before Modification** (tons/year)[3]	**PTE of Combustion Units After Modification** (tons/yr)[3]	**Increase from Combustion** (ton/yr)	**Total Increase from Modification** (ton/yr)
PM	833.6	1008.5	174.9	2.9	2.9	0.0	174.9
PM_{10}	833.6	1008.5	174.9	11.7	11.7	0.0	174.9
$PM_{2.5}$	833.6	1008.5	174.9	11.7	11.7	0.0	174.9
SO_2	0.0	0.0	0.0	0.9	0.9	0.0	0.0
VOC	970.5	1,298.6	328.1	8.5	8.5	0.0	328.1
CO	0.0	0.0	0.0	129.4	129.4	0.0	0.0
NO_X	0.0	0.0	0.0	154.1	154.1	0.0	0.0

[1] Detailed PTE calculations on Page 11 of 13
[2] Detailed PTE calculations on Page 12 of 13
[3] Detailed PTE calculations on Page 5 of 13

Total PTE Increase due to the Modification			
Pollutant	**PTE New Emission Units** (ton/yr)	**Net Increase to PTE of Modified Emission Units** (ton/yr)	**Total PTE for New and Modified Units** (ton/yr)
PM	0.25	174.9	175.15
PM_{10}	0.25	174.9	175.15
$PM_{2.5}$	0.25	174.9	175.15
SO_2	0.02	0.0	0.02
VOC	0.18	328.1	328.28
CO	2.76	0.0	2.76
NO_X	3.29	0.0	3.29
HAPs	0.062	--	0.062

(a) This modification is subject to Significant Source Modification under 326 IAC 2-7-10.5(f)(1), because it is a modification subject to 326 IAC 2-2, Prevention of Significant Deterioration (PSD).

(b) This modification is also subject to 326 IAC 2-7-12(d), Significant Permit Modification, because this modification involves significant changes to permit terms and conditions. Additionally, it involves case-by-case determinations of PSD BACT emission limits.

Permit Level Determination – PSD

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 source modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	PTE (tons/year)						
Process/Emission Unit	**PM**	**PM10**	**SO_2**	**VOC**	**CO**	**NO_X**	**CO_2e**
New three (3) natural gas-fired heaters Potential to Emit	**0.25**	**0.25**	**0.02**	**0.18**	**2.76**	**3.29**	**3,843.5**
	Projected Change in Actual Emissions (ATPA Test) (tons/year)						
Projected Actual Emissions from Combustion Sources	4.7	4.7	0.4	3.4	52.3	62.3	-
Baseline Actual Emissions from Combustion Sources	2.7	2.7	0.2	1.96	29.9	35.6	-
Emissions Increase	**2.0**	**2.0**	**0.2**	**1.4**	**22.5**	**26.7**	**-**
	Actual to Potential (ATP Test) (tons/year)						
New PTE Source-Wide Due to Increase Utilization	13.2	13.2	0.0	1,084.5	0.0	0.0	-
Baseline Actual Emissions Source-Wide	6.68	6.68	0.0	550.0	0.0	0.0	-
Emissions Increase	**6.52**	**6.52**	**0.0**	**534.5**	**0.0**	**0.0**	**-**
Total for Modification	**8.77**	**8.77**	**0.22**	**536.08**	**25.26**	**29.99**	**3,843.5**
PSD Significant Level	25	15	40	40	100	40	75,000

Note: The Permittee has chosen to do an Actual to Projected Actual (ATPA) test for the existing combustion emission units and an Actual to PTE (ATP) test for the existing painting operations affected by the production increase.

Pursuant to the NSR Rule and 326 IAC 2-2, the Permittee shall monitor and keep records of the annual PM, PM10, SO2, CO and NOx emissions from the existing natural gas combustion units (ATPA units) plus the increase to the potential PM and PM10 emissions from the painting operations resulting from the project to determine the emissions increase as a result of this project PSD/SSM N0. 157-29566-00050. Note: This project is subject to PSD only for VOC. The source will continue to comply with the same source-wide PM and PM10 limit of less than 23.1 tons/year.

(a) This modification to an existing major stationary source is major because the VOC emissions increase is greater than the PSD significant level. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do apply.

(b) The new three (3) natural gas-fired flash zone heaters would not be subject to PSD due to the Green House Gas Tailoring Rule because the CO_2e emissions are less than 75,000 tons/year.

All other PSD pollutants are not emitted at or above the PSD significant levels.

Federal Rule Applicability Determination

NSPS:

(a) New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60)

(1) This modification will not affect the NSPS applicability determinations already made to the existing source.

(2) There is no NSPS included in the permit for the new three (3) natural gas-fired heaters.

NESHAP:

(b) National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63)

(1) This modification will not affect the NESHAP applicability determinations already made for the existing source.

(2) 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters.

On June 8, 2007, the United States Court of appeals for the District of Columbia Circuit (in NRDC v. EPA, no. 04-1386) vacated in its entirety the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD. Additionally, since the state rule, 326 IAC 20-95 incorporated the requirements of the NESHAP 40 CFR 63, Subpart DDDDD by reference, the requirements of 326 IAC 20-95 are no longer effective. Therefore, the requirements of 40 CFR 63, Subpart DDDDD and 326 IAC 20-95 are not included in the permit.

On June 4, 2010, EPA proposed a revised version of this NESHAP, Subpart DDDDD. The new three (3) flash heaters each with a heat input capacity of 2.5 MMBtu/hr will be subject to this NESHAP once it is finalized.

(c) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each new or modified pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The source has been evaluated for CAM applicability based on production capacity of 310,000 vehicles per year.

CAM Appplicability for VOC

Facility/Emission Unit		Emission Control Equipment	Emission Limit (Y/N)	Post Control PTE (tons/yr)	Control Efficiency	Pre-Control PTE (tons/yr)	Major Source Threshold (tons/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Unit 001 – Electro-deposition Coating of Vehicle Bodies (ED Coating Line)	ED Body Curing Oven	Thermal Incinerator (B-ED)	Y	VOC = 23.4	70% capture efficiency and 90% destruction efficiency	VOC = 63.3	100	N	-
Unit 002 – Sealing and PVC Undercoating Line	PVC Coating Booth #1 and PVC Coating Booth #2	No VOC Control	Y	VOC = 86 combined PTE	N/A	VOC = 86 combined PTE	100	N	_
Unit 003 – Topcoat System	Topcoat #1 Oven	Catalytic Incinerator (TC-1)	Y	VOC = 115.5	20% capture efficiency and 90% destruction efficiency	VOC = 140.9	100	Y	Y
	Topcoat #2 Oven	Catalytic Incinerator (TC-2)	Y	VOC = 278	20% capture efficiency and 90% destruction efficiency	VOC = 339.0	100	Y	Y
	Topcoat #3 Oven	Catalytic Incinerator (TUT)	Y	VOC = 16.1		VOC = 0.8	100	N	--
Unit 004 – Intermediate (Surfacer) Coating Line.	Inter-mediate Coating Oven	Catalytic Incinerator (SUR)	Y	VOC = 217	20% capture efficiency and 90% destruction efficiency	264.6 tons/yr	100	Y	Y
Unit 005 – Plastic Bumper Coating Line (PBL)	PBL Oven	Thermal Incinerator	Y	VOC = 73	20% capture efficiency and 90% destruction efficiency	VOC = 89	100	N	--

Facility/Emission Unit		Emission Control Equipment	Emission Limit (Y/N)	Post Control PTE (tons/yr)	Control Efficiency	Pre-Control PTE (tons/yr)	Major Source Threshold (tons/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Paint Line Curing Oven	Catalytic/Thermal Oxidizer	Y	VOC = 102.6	Overall Control - 21%	VOC = 130.2	100	Y	Y

CAM Applicability for HAPs

Facility/Emission Unit		Emission Control Equipment	Emission Limit (Y/N)	Post Control PTE (tons/yr)	Control Efficiency	Pre-Control PTE (tons/yr)	Major Source Threshold (tons/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Unit 001 – Electro-deposition Coating of Vehicle Bodies (ED Coating Line)	ED Body Curing Oven	Thermal Incinerator (B-ED)	Y	Single HAP = <10 combined HAPs = <25	70% capture efficiency and 90% destruction efficiency	Single HAP = <10 combined HAPs = <25	10 Single 25 combined	N	_
Unit 003 – Topcoat System	Topcoat #1 Oven	Catalytic Incinerator (TC-1)	Y	Single HAP = <10 combined HAPs = <25	20% capture efficiency and 90% destruction efficiency	Single HAP = >10 combined HAPs = >25	Single HAP = >10 combined HAPs = >25	N	_
	Topcoat #2 Oven	Catalytic Incinerator (TC-2)	Y	Single HAP = <10 combined HAPs = <5	20% capture efficiency and 90% destruction efficiency	HAP-	Single HAP = >10 combined HAPs = >25--	N	_
Unit 004 – Intermediate (Surfacer) Coating Line.	Inter-mediate Coating Oven	Catalytic Incinerator (SUR)	Y	Single HAP = <10 combined HAPs =<25	20% capture efficiency and 90% destruction efficiency	Single HAP = >10 combined HAPs = >25	10 Single 25 combined --	N	_
Unit 005 – Plastic Bumper Coating Line (PBL)	PBL Oven	Thermal Incinerator	Y	Single HAP = <10 combined HAPs = <25	20% capture efficiency and 90% destruction efficiency	Single HAP = >10 combined HAPs = >25	10 Single 25 combined	N	-_
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Paint Line Curing Oven	Catalytic/ Thermal Oxidizer	Y	Single HAP = <10 combined HAPs = <25	--	Single HAP = >10 combined HAPs = >25	10 Single 25 combined --	N	_

CAM Applicability for PM/PM10

Facility/Emission Unit		Emission Control Equipment	Emission Limit (Y/N)	Post Control PTE (tons/yr)	Control Efficiency	Pre-Control PTE (tons/yr)	Major Source Threshold (tons/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
Unit 002 – Sealing and PVC Undercoating Line	PVC Coating Booth #1	Dry filter	Y	PM/PM10 = 2.8	98%	PM/PM10 = 142	100	Y	N
	PVC Coating Booth #2	Dry filter	Y	PM/PM10 = 2.48	98%	PM/PM10 = 142	100	Y	N
Unit 003 – Topcoat System	Topcoat #1 Booth	Water wash	Y	PM/PM10 = 2.0	98%	PM/PM10 = 100.8	100	Y	N
	Topcoat #2 Booth	Water wash	Y	PM/PM10 = 3.5	98%	PM/PM10 = 175.6	100	Y	N
	Topcoat #3 Booth	Water wash	Y	PM/PM10 = 0.71	98%	PM/PM10 = 35.4	100	N	–
Unit 004 – Intermediate (Surfacer) Coating Line.	Inter-mediate Coating Booth	Water wash	Y	PM/PM10 = 1.8	98%	PM/PM10 = 88.7	100	N	–
Unit 005 – Plastic Bumper Coating Line (PBL)	PBL Paint Booth	Water wash	Y	PM/PM10 = 2.7	98%	PM/PM10 = 136.1	100	Y	N
Unit 006 – Anticorrosion Coating	Black Coat Booth	Dry Filter	Y	PM/PM10 = 0.89	98%	PM/PM10 = 44.4	100	N	_
	Anti-corrosion Coating Booth	Water wash	Y	PM/PM10 = 0.89	98%	PM/PM10 = 44.4	100	N	_
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Paint Line Booth	Water wash	N	PM/PM10 = 1.4	98%	PM/PM10 = 70	100	N	–
Unit 007- Final Repair (Touchup) Painting	Touchup Trim Booth	None	Y	PM/PM10 = .25	--	PM/PM10 = .25	100	N	--

Minimal - means < 5 tons/year.

Based on this evaluation,

(1) ED Coating Line, Unit 001:

ED Coating Line , Unit 001 is not subject to CAM for VOC and HAPs emissions because this line has uncontrolled potential to emit VOC less than 100 tons per year, single HAP to less than 10 tons per year and combined HAPs to less than 25 tons per year.

(2) Sealing and PVC Undercoating Line, Unit 002:

The PVC Coating Booth #1 and PVC Undercoating Booth #2 for the Sealing and PVC Undercoating Line, Unit 002 are not subject to CAM for VOC emissions because these booths are not using a control device to meet the VOC emissions limitation or standard.

The PVC Undercoating Booth #1 and PVC Undercoating Booth #2 for the Sealing and PVC Undercoating Line, Unit 002 are subject to CAM for PM and PM10., because each pollutant is emitted at a major source threshold level. Although, these booths are subject to NESHAP, Subpart IIII that was promulagted after November 15, 1990, they are not exempt from the CAM rule because this NESHAP does not regulate PM and PM10.

The PVC Coating Booth #1 and PVC Undercoating Booth #2 for the Sealing and PVC Undercoating Line, Unit 002 are not large units for PM and PM10 because each pollutant post control emission is below the major source threshold level.

(3) Topcoat System, Unit 003:

(A) The Topcoat Booth #1 and Topcoat Booth #2 are subject to CAM for PM and PM10 emissions, because each pollutant is emitted at a major source threshold level. Although, these booths are subject to NESHAP, Subpart IIII that was promulagated after November 15, 1990, they are not exempt from the CAM rule because this NESHAP does not regulate PM and PM10.

The Topcoat Booth #1 and Topcoat Booth #2 are each not large units for PM and PM10 because each pollutant post control emission is below the major source threshold level.

The Topcoat Booth #1 and Topcoat Booth #2 are not subject to CAM for VOC and HAPs emissions because these facilities are not using a control device to meet each VOC and HAPs emission limitations or standards.

(B) The Topcoat Booth #1 Oven and Topcoat Booth #2 Oven are subject to CAM for VOC emissions, because this pollutant is emitted at a major source threshold level. Although, these ovens are subject to NESHAP, Subpart IIII that was promulagated after November 15, 1990, they are not exempt from the CAM rule because this NESHAP does not regulate VOC.

The Topcoat Booth #1 Oven and Topcoat Booth #2 Oven are large units for VOC, because each VOC post control emission is at major source threshold level or more.

The Topcoat #1 Oven and Topcoat #2 Oven are not subject to CAM for HAPs emissions, because these emission units and HAPs are regulated under NESHAP, Subpart IIII that was promulgated on April 26, 2004, which is after November 15, 1990.

(C) The Topcoat Booth #3 and Oven are not subject to CAM for VOC, PM and PM10 because each pollutant uncontrolled PTE is less than the major source threshold level.

(4) Intermediate Surfacer, Unit 004:

(A) The Intermediate Surfacer Coating Booth is not subject to CAM for PM and PM10 emissions because this booth has uncontrolled potential to emit PM and PM10 less than 100 tons per year.

(B) The Intermediate Surfacer Coating Booth Oven is subject to CAM for VOC emissions, because this pollutant is emitted at a major source threshold level. Although, this oven is subject to NESHAP, Subpart IIII that was promulagated after November 15, 1990, it is not exempt from the CAM rule because this NESHAP does not regulate VOC.

The Intermediate Surfacer Coating Booth Oven is a large unit for VOC, because the VOC post control emission is at major source threshold level or more.

The Intermediate Surfacer Coating Booth Oven is not subject to CAM for HAPs emissions, because this emission unit and HAPs are regulated under NESHAP, Subpart IIII that was promulgated on April 26, 2004, which is after November 15, 1990.

(5) Plastic Bumper (PBL), Unit 005:

(A) The PBL Paint Booth is subject to CAM for PM and PM10 emissions, because each pollutant is emitted at a major source threshold level. Although, these booths are subject to NESHAP, Subpart IIII that was promulagated after November 15, 1990, they are not exempt from the CAM rule because this NESHAP does not regulate PM and PM10.

The PBL Paint Booth is not a large unit for PM and PM10 because each pollutant post control emission is below the major source threshold level.

(B) The PBL Oven is not subject to CAM for VOC emissions, because this pollutant is not emitted at a major source threshold level.

The PBL Oven is not subject to CAM for HAPs emissions, because these emission unit and HAPs are regulated under NESHAP, Subpart IIII that was promulgated on April 26, 2004, which is after November 15, 1990.

(6) Anticorrosion Coating, Unit 006:

The Black Coat Booth and Anticorrosion Coating Booth are not subject to CAM for PM and PM10 emissions because these booths have uncontrolled potential to emit PM and PM10 less than 100 tons per year.

(7) Plastic Fascia Paint Line, PFPLS#2:

(A) The PFPLS#2, assumed as one booth includes a Primer Spray Booth, Basecoat Spray Booth and Clearcoat Spray Booth, is not subject to CAM for PM and PM10 emissions because this line have uncontrolled potential to emit PM and PM10 less than 100 tons per year.

(B) The PFPLS#2 Oven is subject to CAM for VOC emissions, because this pollutant is emitted at a major source threshold level and it is a large unit because it post control emissions are greater than the major source threshold level.

(C) The PFPLS#2 Oven is not subject to CAM for HAPs emissions, because these emission unit and HAPs are regulated under NESHAP, Subpart IIII that was promulgated on April 26, 2004, which is after November 15, 1990.

State Rule Applicability Determination

(a) 326 IAC 2-2 (PSD)

The source modification is subject to PSD for VOC pollutant only. See detailed discussion under the Permit Level Determination – PSD section.

(b) 326 IAC 2-2-3 (PSD Rule: Control Technology Review Requirements)

See Appendix B for the PSD BACT analysis.

(c) 326 IAC 2-2-4 (Air Quality Analysis)

An air quality analysis was not performed for VOCs because they are photochemically reactive. Photochemical models like UAM-V are used in regulatory or policy assessments to simulate the impacts from all sources by estimating pollutant concentrations and deposition of both inert and chemically reactive pollutants over large spatial scales. Currently, U.S. EPA has no regulatory photochemical models which can take into account smaller spatial scales or single source PSD modeling for ozone.

(d) 326 IAC 2-2-8 (Source Obligation)

(1) Pursuant to 2-2-8(1), approval to construct, shall become invalid if construction is not commenced within eighteen (18) months after receipt of the approval, if construction is discontinued for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time.

(2) Approval for construction shall not relieve the Permittee of the responsibility to comply fully with applicable provisions of the state implementation plan and any other requirements under local, state, or federal law.

(e) 326IAC 2-2-10 (Source Information)

The Permittee has submitted all information necessary to make the determination required under this rule.

(f) 326 IAC 2-2-12 (Permit Rescission)

The permit issued under this rule shall remain in effect unless and until it is rescinded, modified, revoked, or it expires in accordance with 326 IAC 2-1.1-9.5 or section 8 of this rule.

(g) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

This modification (vehicle production increase) will not result in the applicability of 326 IAC 2-4.1-1 because the source is specifically regulated by NESHAP 40 CFR Part 63, Subpart IIII, which was issued pursuant to Section 112(d) of the CAA.

(h) 326 IAC 8-2-9 (Miscellaneous Metal Coating), 326 IAC 8-2-2 (Automobile and Light Duty Truck Coating Operations, 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), etc.

This modification (vehicle production increase) will not affect these state rules that were determined to be applicable to the source.

(i) 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations)

326 IAC 7-1.1-2 applies to all emission units with a PTE of 25 tons per year or 10 pounds per hour of sulfur dioxide.

The proposed three (3) natural gas-fired heaters are not subject to 326 IAC 7-1.1-2 because they do have a PTE of 25 tons per year or 10 pounds per hour of sulfur dioxide.

(j) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Facilities)
The three (3) new flash zone heaters each has a maximum heat input rate of 2.5 MMBtu/hr are subject to 326 IAC 6-2-4 since they are indirect type heaters. Pursuant to this rule the Particulate emissions from these heaters shall be limited using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

$$= 0.41 \text{ lb/MMBtu}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

Using natural gas for fuel the heaters are in compliance with 326 IQAC 6-2-4:
7.6 lb/MMCF * 1 MMCF/1000 MMBtu = 0.0076 lb/MMBtu < 0.41 lb/MMBtu

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 existing Compliance Determination and Monitoring Requirements applicable to the source will not be affected by this modification (increase in vehicle production). The existing Compliance Determination and Monitoring Requirements applicable to the source are as follows:

Control	Emission Unit	Parameter	Frequency	Range/Minimum Value
Catalytic Incinerators (TC-1, TC-2, TUT, SUR)	Topcoat #1 Oven, Topcoat #2 Oven, Twotone and Repair Oven, Intermediate Coating Oven and Fascia Paint Line Oven	Temperature at the inlet to the catalyst bed	Continuous (once/minute) Stack testing - Every 2.5 years	650^0F or temperature established during latest compliance test.
		Duct pressure or fan amperage	Once/day	Normal range as established during latest compliance test
Thermal Incinerators	Plastic Bumper Coating Line Oven and Fascia Paint Line Oven	Operating temperature	Continuous (once/minute)	1400^0F or temperature established during latest compliance test
		Duct pressure or fan amperage	Once/day	Normal range as established during latest compliance test
Water Wash System	Topcoat #1 Booth, Topcoat #2 Booth, Twotone and Repair Booth/Topcoat #3 Booth and Plastic Bumper Coating Line (Unit 005)	Visual checks of each booth flood pans and water circulation. Warning system to ensure water circulation pump is operational	Once/day visual inspection	None
Dry Filter	PVC Coating Booth #1, PVC Coating Booth #2 (Unit 002)	Inspections of the coating booth stacks	Semi-annual	None

These Compliance Determinations and Compliance Monitoring are necessary to meet the various PSD BACT limits required under 326 IAC 2-2, PSD.

Proposed Changes

The following changes listed below have been made to Part 70 Operating Permit No. T157-5906-00050. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

(a) *Sections D.1, D.2, D.4, D.6 and D.7 have been revised to incorporate PSD/SSM No. 157-29566-00050.*

(b) *The PSD BACT limits in the permit are required to be reported as reflected in the reporting conditions for each of these Section Ds. However, there are no Reporting Forms in the Part 70 Operating Permit. Therefore, this permitting action has included the Reporting Forms only for the affected Sections D.1, D.2, D.4, D.6 and D.7. The Part 70 Operating Permit Renewal will address the remaining Reporting Forms required in the other Section Ds.*

SECTION D.1

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

D.1.1 Prevention of Significant Deterioration (PSD) - Particulate Matter [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, CP 157-4485-00050, issued September 13, 1995, CP 157-9619-00050, issued February 11, 1999, and **PSD/SSM 157-29566-00050** ~~and as revised by this Part 70 permit~~, the Permittee must adhere to the following conditions:

(a) The source shall not produce greater than ~~262,000~~ **310,000** vehicles per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The particulate (PM/PM10) emissions from PVC #1 Coating Booth, Topcoat #1 Coating Booth, Topcoat #2 Coating Booth, ~~Twotone and Repair Coating Booth~~ , **Topcoat Booth #3,** Intermediate (Surfacer) Coating Booth, Plastic Bumper Coating Booth, Black Coat and Wax Coating Booth, Anticorrosion Coating Booth, Touchup Trim Coating Booth, Touchup IPC Coating Booth, source-wide natural gas combustion, and all insignificant facilities that were permitted by the PSD (79) 1651 Revision shall ~~not exceed~~ **be limited to less than** 23.1 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) The visible emissions from any plant stack, vent or other emission point shall not exceed 10% opacity.

(d) The total natural gas combustion at the source shall not exceed 2,380 million standard cubic feet per 12 consecutive month period with compliance determined at the end of each month.

Compliance with Condition D.1.1(a) and (d) shall satisfy the requirements of 326 IAC 2-2.

Compliance with Condition D.1.1(b) shall render the requirements of 326 IAC 2-2 not applicable.

***

D.1.3 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2][326 IAC 8-1-6]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and Significant Permit Modification 157-22703-00050, 326 IAC 2-2-3, and 326 IAC 8-1-6, the total VOC emissions from all surface coating and associated purge solvent operations, wiping/cleaning solvents, and storage shall not exceed ~~1,087~~ **1,084.5** tons per twelve consecutive month period with compliance determined at the end of each month.

Compliance with this limitation, and those contained in Conditions D.2.1, D.4.1, D.5.1, D.6.1, D.7.1, and D.8.1, shall satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1-6.

Compliance with the VOC limit in this condition, and the VOC limits in Conditions D.3.5 and D.4.6, shall make 326 IAC 2-2, Prevention of Significant Deterioration (PSD) not applicable to the source modification permitted in SSM 157-22702-00050.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(e) Plastic Bumper Coating Line (PBL), identified as Unit 005, with a capacity of 60 units per hour, constructed in 1989, consisting of the following units:

(1) One (1) PBL Paint Booth, utilizing electrostatic application system, using a water wash as particulate matter control, and exhausting to three (3) stacks, identified as BPR-1, BPR-2, and BPR-JR;

(2) One (1) PBL Booth Preheat, with one (1) natural gas-fired burner with a heat input capacity of 17.10 MMBtu/hr;

(3) One (1) PBL Booth Reheat, with two (2) insignificant natural gas-fired burners;

(4) One (1) PBL Oven, using a 2.0 MMBtu/hr natural gas-fired thermal incinerator as VOC control, and exhausting to one (1) stack, identified as BPR Inc.; and

(5) One (1) PBL Cool Down area.

(6) Two (2) PBL natural gas-fired flash zone heaters each with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction.

(h) One (1) paint mixing room for the Plastic Bumper Coating Line, identified as Unit 008, constructed in 1989, using no controls, and exhausting to three (3) vents, identified as Mix-1, Mix-2, and Mix-3.

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

D.2.4 Particulate Emissions from Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the particulate emissions from the two (2) 2.5 MMBtu/hour PBL flash zone heaters shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$Pt = \frac{1.09}{0.26}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.2.~~12~~**13** Record Keeping Requirements

(a) To document compliance with Conditions D.2.1, ~~D.2.8~~ **D.2.9**, and ~~D.2.9~~ **D.2.10**, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.1, and the compliance determination requirements established in Conditions ~~D.2.8~~ **D.2.9**, and ~~D.2.9~~ **D.2.10**. 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 (as applied) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(4) The volume weighted average VOC content of the coatings used (as applied) for each day.

(5) The continuous temperature records (on a three-hour average basis) for the thermal incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(6) Records of any thermal incinerator shutdowns due to duct pressure or fan amperage deviations.

(b) To document compliance with Condition ~~D.2.10~~ **D.2.11**, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available within 1 hour for inspection by IDEM.

(c) ~~All records shall be maintained in accordance with~~ Section C - General Record Keeping Requirements, ~~of this permit~~ **contains the Permittee's obligations with regard to the records required by this condition**.

D.2.~~12~~**13** Reporting Requirements

~~To document compliance with Condition D.2.1, compliance reports shall be submitted on a calendar monthly basis within 21 days of the end of each month. The reports shall contain the following data for each operation on a monthly basis, based on actual daily coating usage:~~

~~(1) Average coating VOC content in kg VOC/liter coating as applied;~~

~~(2) Average coating volume % solids as applied;~~

~~(3) Average actual solids transfer efficiency;~~

~~(4) Overall thermal incinerator control efficiency, reflecting capture and destruction efficiency;~~

~~(5) Average kg VOC/liter of applied solids, based on actual transfer efficiency; and~~

~~(6) Coating usage in liters.~~

~~When more than one coating has been averaged for compliance purposes, the average shall be determined on a weighted average by volume basis. All data necessary to verify weighted averages shall be included in the report.~~

A quarterly report of the daily VOC content of the coatings used, based on a volume weighted average from the PBL Coating Booth and the quarterly summary of the information to document the compliance status with Condition D.2.1, shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that

meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

***

(c) Topcoat System, identified as Unit 003, with a capacity of 60 units per hour, constructed in 1989, and modified in 2006 and 2008 consisting of the following units:

***

(11) One (1) ~~Twotone and Repair~~ T**opcoat** Booth **#3**, utilizing the electrostatic air atomized, electrostatic bell method of application, using a water wash as particulate matter control, and exhausting to five (5) stacks, identified as TUT-1 through TUT-5;

(12) One (1) ~~Twotone and Repair~~ T**opcoat** Booth **#3**, Preheat, with two (2) natural gas-fired burners, each with a heat input capacity of 16.26 MMBtu/hr;

(13) One (1) ~~Twotone and Repair~~ T**opcoat** Booth **#3** Reheat, with one (1) insignificant natural gas-fired burner;

(14) One (1) ~~Twotone and Repair~~ T**opcoat** Booth **#3** Oven, with three (3) insignificant natural gas-fired burners, using a 2.5 MMBtu/hr natural gas-fired catalytic incinerator (TUT) as VOC control, and exhausting to one (1) stack, identified as TUT-O-1-2;

(15) One (1) ~~Twotone and Repair~~ T**opcoat** Booth **#3** Cool Down area; and

(16) One (1) Wet Sand Repair Dryoff Oven, with one (1) insignificant natural gas-fired burner with a heat input capacity of 1.49 MMBtu/hr.

(17) One (1) Topcoat Booth #3 natural gas-fired flash zone heater with a heat input capacity of 2.5 MMBtu/hr, permitted in 2010 for construction.

***

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

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

D.4.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, **PSD/SSM No. 157-29566-00050**, 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following:

(a) The daily VOC emissions from each facility shall not exceed the corresponding limits in the following table. Compliance with these limits shall be demonstrated pursuant to Condition D.4.9:

Facility	lb VOC/gal applied solids	kg VOC/liter applied solids
ED Body Coating **Line** (**ED Dip/Rinse** Tank**s and Curing Oven)**	~~0.52~~ **0.40[a]**	0.062
Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth, ~~Twotone and Repair Booth)~~	12.3[~~a~~b]	1.47[a]
Topcoat Booth #3	**10.6[c]**	**1.27[c]**
Intermediate Coating Booth	8.76[~~b~~d]	1.05[b]

[a] **Coatings used at the ED Coating Line on a daily basis**
[~~a~~b]. **Volume** Weighted average of all Topcoat coatings **used in Booths #1 and #2.**
[c]. **Volume Weighted average of all Topcoat coatings used in Booth #3.**
[~~b~~d] **Volume** Weighted average of all Intermediate coatings.

(b) The incinerators used to control VOC emissions from the Topcoat #1 Booth, Topcoat #2 Booth, ~~Twotone and Repair Booth,~~ and Intermediate Coating Booth shall each achieve a minimum 20% capture efficiency and 90% destruction efficiency. ~~The ED Body Oven incinerator shall achieve a minimum 70% capture efficiency and 90% destruction efficiency~~.

The VOC emissions from the Topcoat #3 Booth's Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent.

The VOC emissions from the ED Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent, and a minimum capture efficiency of 70% for the entire ED Coating Line (ED Dip/Rinse Tanks and Curing Oven).

(c) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(d) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.5.1, D.6.1, D.7.1, and D.8.1, shall satisfy the requirements of 326 IAC 2-2.

***

D.4.3 Particulate ~~Matter~~ **Emissions** from Sources of Indirect Heating [326 IAC 6-2-4]

(a) Pursuant to 326 IAC 6-2-4, the particulate ~~matter~~ emissions from the one (1) insignificant 5.0-MMBtu/hr ED Chassis hot water boiler, the two (2) insignificant 1.045-MMBtu/hr ED Pretreatment boilers, and the one (1) insignificant 4.0-MMBtu/hr ED Paint Temperature Control boiler shall each not exceed 0.435 pounds per MMBtu energy input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr).

(i) Pursuant to 326 IAC 6-2-4, the particulate emissions from the 2.5 MMBtu/hour Topcoat #3 flash zone heater shall not exceed 0.41 lb/MMBtu.

This limitation is based on the following equation

$$\mathbf{Pt = \frac{1.09}{{}^{0.26}}}$$

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. (Q = 34.17 MMBtu/hr + 7.5 MMBtu/hr = 41.67MBtu/hr).

D.4.4 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-2]

(a) Pursuant to 326 IAC 8-2-2, the Permittee shall not allow the discharge of VOC into the atmosphere in excess of the following limits:

(1) The daily VOC emissions from the Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth, and ~~Twotone and Repair~~ **Topcoat #3** Booth) shall not exceed 15.3 pounds of VOC per gallon of applied solids (1.83 kilograms of VOC per liter of applied solids) (site-specific RACT limit established pursuant to 325 IAC 8-1-5 (Petition for alternate controls)). This limit applies to the weighted average of all Topcoat coatings.

D.4.6 Prevention of Significant Deterioration (PSD) Minor Limit [326 IAC 2-2]

The annual VOC input, including cleanup solvents, to the modified Topcoat System, identified as Unit 003 shall be limited such that the VOC emissions do not exceed ~~415.5~~ **393** tons per twelve (12) consecutive month period with compliance demonstrated at the end of each month.

Compliance with this VOC limit and the VOC limits in Conditions D.1.3 and D.3.5 shall render 326 IAC 2-2, Prevention of Significant Deterioration not applicable to the source modification permitted in SSM 157-22702-00050.

D.4.7 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate emissions from the Topcoat booths (Topcoat #1 Booth, Topcoat #2 Booth, and ~~Twotone and Repair~~ **Topcoat #3** Booth) and the Intermediate Coating Booth shall be controlled by water washes and the Permittee shall operate the control devices in accordance with manufacturer's specifications.

***

D.4.12 Catalytic Incinerators Temperature [326 IAC 2-7-5(3)] **[40 CFR 64]**

(a) A continuous monitoring system shall be calibrated, maintained, and operated for measuring the temperature at the inlet to the catalyst bed of each catalytic incinerator used to control emissions from the ED Body Oven, Topcoat #1 Oven, Topcoat #2 Oven, ~~Twotone and Repair~~ **Topcoat #3** Oven, and Intermediate Coating Oven. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a three (3) hour average. From the date of issuance of this permit until the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C –Response to Excursions or Exceedances whenever the three (3) hour average inlet temperature to the catalyst bed of each catalytic incinerator is below 650 ^{o}F **or the three (3) hour average temperature established during the latest stack test, the Permittee shall take reasonable response**. A three (3) hour average temperature that is below 650^{0}F is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit. **Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.**

(b) The Permittee shall determine the three (3) hour average temperature at the inlet to the catalyst bed of each catalytic incinerator from the most recent valid performance test that demonstrates compliance with the limits in Conditions D.4.1, and D.4.4 as approved by IDEM.

(c) On and after the date the approved performance test results are available, the Permittee shall take appropriate response steps in accordance with Section C - Response to Excursions or Exceedances whenever the 3-hour average temperature at the inlet to the catalyst bed of each catalytic incinerator is below the three (3) hour average inlet temperature as observed during the compliant performance test. A three (3) hour average temperature that is below the three (3) hour average temperature as observed during the compliant performance test is not a deviation of this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

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

D.4.13 Parametric Monitoring [326 IAC 2-7-5(3)] **[40 CFR 64]**

(a) The Permittee shall determine the appropriate duct pressure or fan amperage for each catalytic incinerator (B-ED, TC-1, TC-2, TUT, and SUR) from the most recent valid stack test that demonstrates compliance with the permit limits on VOC destruction efficiency and control efficiency as approved by IDEM.

(b) The duct pressure or fan amperage whichever is monitored by the Permittee under this condition, shall be observed at least once per day when the thermal or catalytic incinerator is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.4.14 Operator Training Program

The Permittee shall implement an operator training program.

(a) All operators that perform surface coating operations using spray equipment or booth maintenance shall be trained in the proper set-up and operation of the water wash control systems on the Topcoat #1, Topcoat #2, ~~Twotone and Repair~~ **Topcoat #3**, and Intermediate Coating lines. All existing operators shall be trained upon permit issuance. All new operators shall be trained upon hiring or transfer.

(b) Training shall include proper flow of water through the water pan of the water wash system, and other factors that affect water pan capture efficiency (e.g., debris in the water pans), and trouble shooting practices. The training program shall be written and retained on site. The training program shall include a description of the methods to be used at the completion of initial and refresher training to demonstrate and document successful completion. Copies of the training program, the list of trained operators and training records shall be maintained on site or available ~~within~~ **not later than** 1 hour for inspection by IDEM.

(c) All operators shall be given refresher training annually.

D.4.15 Water Wash Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

(a) Daily visual inspections shall be made on each water wash flood pans and water circulation associated with the Topcoat #1 Booth, exhausting to nine (9) stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth, exhausting to ten (10) stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth, exhausting to five (5) stacks, identified as TUT1 through TUT-5 to verify the control system proper operation. A warning system shall be installed and operated to ensure that the water circulation pump is operational at all times when any of the following emission units are in operation: Topcoat #1 Booth, Topcoat #2 Booth, and Topcoat #3 Booth. When a system warning is received, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

(b) Semi-annual inspections shall be performed of the coating emissions from the Topcoat #1 Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5 and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions or when evidence of overspray emission is observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.4.~~15~~**16** Record Keeping Requirements

(a) To document **the** compliance **status** with Conditions D.4.1, D.4.4, D.4.5, D.4.6, ~~and D.4.12~~ the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.4.1, D.4.4, D.4.5, D.4.6, ~~and D.4.12~~, and the compliance determination requirements established in Condition D.4.12. Records necessary to demonstrate **the** compliance shall be available within 30 days after the end of of each compliance period.

(1) The VOC content of each coating material (as applied) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The VOC content of each coating material used in the ED Body Coating Tank, as applied, less water.

(3) The solids content of each coating material used (as applied).

(4) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(5) The volume weighted average VOC content of the coatings used (as applied) for each day.

~~(6) The continuous temperature records (on a three-hour average basis) for each incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.~~

~~(7) Records of any catalytic and thermal incinerator shutdowns due to duct pressure or fan amperage deviations.~~

~~(8) The continuous inlet temperature to the catalyst bed of each catalytic incinerator~~.

(b) To document the compliance status with Conditions D.4.12 and D.4.13, the Permittee shall maintain the following records:

(1) The continuous temperature records (on a three-hour average basis) for each incinerator and the three-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(2) Records of any catalytic incinerator shutdowns due to duct pressure or fan amperage deviations.

(3) The continuous inlet temperature to the catalyst bed of each catalytic incinerator.

~~(b)~~**(c)** To document the compliance status with Condition D.4.14, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available ~~within~~ **not later than** 1 hour after request for inspection by IDEM.

(d) To document the compliance status with Condition D.4.15, the Permittee shall maintain records of daily visual inspection of the water wash system, dates of any water wash warning system going off and corrective actions taken and log of semi-annual inspections of the Topcoat #1 Booth stacks, identified as TC1-1 through TC1-9; Topcoat #2 Booth stacks, identified as TC2-1 through TC2-10 and Topcoat #3 Booth stacks, identified as TUT1 through TUT-5.

~~(c)~~ **(e)** ~~All records shall be maintained in accordance with~~ Section C - General Record Keeping Requirements of this permit **contains the Permittee's obligations with regard to the records required by this condition.**

D.4.~~16~~ **17** Reporting Requirements

~~(a) To document compliance with Conditions D.4.1, D.4.4, D.4.5, and D.4.6, compliance reports shall be submitted on a calendar monthly basis within 21 days after the end of each month.~~

~~The reports shall contain the following data for each operation on a monthly basis, based on actual daily coating usage:~~

~~(1) Average coating VOC content in kg VOC/liter coating as applied~~

~~(2) Average coating VOC content in kg VOC/liter coating, as applied, less water, for the ED Body and ED Chassis Coating Tanks~~

~~(3) Average coating volume % solids as applied~~

~~(4) Average actual solids transfer efficiency~~

~~(5) Overall control efficiency for each incinerator, reflecting capture and destruction efficiency~~

~~(6) Average kg VOC/liter of applied solids, based on actual transfer efficiency~~

~~(7) Coating usage in liters~~

~~When more than one coating has been averaged for compliance purposes, the average shall be determined on a weighted average by volume basis. All data necessary to verify weighted averages shall be included in the report~~.

A quarterly report of the daily VOC content of the coatings used from the ED Coating Line, Topcoat #1 Booth, Topcoat #2 Booth, Topcoat Booth #3 and Intermediate Coating Booth and the quarterly summary of the information to document the compliance status with Conditions D.4.1 and D.4.6, shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.6 FACILITY OPERATION CONDITIONS

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

D.6.1 Volatile Organic Compounds (VOC) Best Available Control Technology ~~for Volatile Organic Compounds (VOC)~~ [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3 and PSD/SSM 157-29566-00050~~.~~ BACT for VOC for the facilities described in this section is the following:

(a) The daily VOC emissions from each facility **the Sealing and PVC Undercoating Line, identified as Unit 002** shall not exceed the corresponding limits in the following table. Compliance with these limits shall be demonstrated pursuant to Condition D.6.7:

Facility	lb VOC/gal **applied** coating solids	kg VOC/liter coating solids
Sealing and PVC Undercoating Line, identified as Unit 002 (PVC Coating Booth**s #1 and #2)**	~~0.25~~ **0.30** lb/gal applied coating solids (lb/gacs)	0.03
~~Black and Wax Booth (black phthalic resin application)~~	~~17.9~~	~~2.14~~
~~Black and Wax Booth (inner panel wax application)~~	~~6.43~~	~~0.77~~
~~Anticorrosion Coating Booth (underfloor wax application)~~	~~3.59~~	~~0.43~~

(b) The daily VOC emissions from the Black and Wax Booth and the Anticorrosion Coating Booth shall not exceed the corresponding limits in the following table. Compliance with these limits shall be determined pursuant to Condition D.6.7:

Facility	**lb VOC/gal coating solids (lb/gcs)**	**kg VOC/liter coating solids**
Black and Wax Booth (black phthalic resin application)	**17.9**	**2.14**
Black and Wax Booth (inner panel wax application)	**6.43**	**0.77**
Anticorrosion Coating Booth (underfloor wax application)	**3.59**	**0.43**

(~~b~~**c**) The following spray application methods must be used whenever applying the following coatings:

(1) PVC Undercoat (in PVC Coating Booth #1) - Airless

(2) Underfloor Wax (in Anticorrosion Booth) - Airless

(3) Inner Panel Wax (in Black and Wax Booth) - Air or Airless with minimum transfer efficiency of 80%

(~~c~~**d**) Pretreatment Cleaning shall utilize only VOC free detergents, conditioners, and rinses in the body and chassis pre-treatment cleaning operations.

(~~d~~**e**) Pertaining to purge solvent use:

(1) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(2) Block painting will be utilized whenever possible to minimize color changes and the resulting purge.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.5.1, D.7.1, and D.8.1 shall satisfy the requirements of 326 IAC 2-2.

***

D.6.3 Volatile Organic Compound (VOC) Limitations [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9, the Permittee shall not allow the discharge of VOC into the atmosphere in excess of the following limits:

(a) The daily VOC emissions from **Sealing and** PVC Coating (PVC Coating Booth #1, PVC Coating Booth #2 and Sound Deadener Operation) shall not exceed 3.5 pounds of VOC per gallon of coating less water (0.42 kilograms of VOC per liter of coating less water).

(b) The daily VOC emissions from Anticorrosion Coating (Black and Wax Booth and Anticorrosion Coating Booth) shall not exceed 3.0 pounds of VOC per gallon of coating less water (0.36 kilograms of VOC per liter of coating less water). This limit applies to the weighted average of all Anticorrosion coatings.

Compliance with these limits shall be demonstrated pursuant to Condition D.6.7.

***

D.6.9 Dry Filters Monitoring [326 IAC 2-7-5(3)] [40 CFR 64]

Dry filters shall be operated whenever the PVC Coating Booth #1 and PVC Coating Booth #2, Black and Wax coating Booth and Anticorrosion Coating Booth are in operation and shall be maintained in accordance with manufacturer's specification. Filters shall be changed on a monthly basis. Magnahelic pressure gauges shall be installed for continuous pressure monitoring and to detect whether filters need to be changed more frequently due to abnormal overspray loading. When the gauges indicate that a problem exists for the dry filter, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.6.~~9~~**10** Record Keeping Requirements

(a) To document **the** compliance status with Conditions D.6.1 and D.6.3, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limits established in Conditions D.6.1 and D.6.3. Records necessary to demonstrate compliance shall be available not later than 30 days after the end of each compliance period.

(1) The VOC content of each coating material (as applied, less water) and the VOC content of each solvent (including purge solvents and thinners) used less water.

(2) The solids content of each coating material used (as applied).

(3) The amount of coating material and solvent (including purge solvents and thinners) used on a daily basis.

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

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

(4) The volume weighted average VOC content of the coatings used (as applied) for each day.

(b) To document the compliance status with Condition D.6.8, the Permittee shall maintain copies of the training program, and the list of trained operators. Training records shall be maintained on site or available not later than 1 hour for inspection by IDEM.

(c) To document the compliance status with Condition D.6.9, the Permittee shall maintain log containing records of dry filter replacement, and any required corrective actions taken.

(~~c~~**d**) ~~All records shall be maintained in accordance with~~ Section C - General Record Keeping Requirements, ~~of this permit~~ **contains the Permittee's obligations with regard to the records required by this condition**.

D.6.~~10~~**11** Reporting Requirements

~~(a) To document compliance with Conditions D.6.1 and D.6.3, compliance reports shall be submitted on a calendar monthly basis within 21 days of the end of each month. The reports shall contain the following data for each operation on a monthly basis, based on actual daily coating usage:~~

~~(1) Average coating VOC content in kg VOC/liter coating as applied~~

~~(2) Average coating VOC content in kg VOC/liter coating, as applied, less water~~

~~(3) Average coating volume % solids as applied~~

~~(4) Average kg VOC/liter of coating solids as applied~~

~~(5) Coating usage in liters~~

~~When more than one coating has been averaged for compliance purposes, the average shall be determined on a weighted average by volume basis. All data necessary to verify weighted averages shall be included in the report.~~

A quarterly report of the daily VOC content of the coatings used, based on a volume weighted average from the Sealing and Undercoating Line and Anticorrosion Coating Booth and the quarterly summary of the information to document the compliance status with Condition D.6.1, shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

SECTION D.7 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(~~j~~ **k**) ~~Application of adhesives to various vehicle parts, identified as Unit 010, constructed in 1989.~~ **Trim Line, identified as Unit 010, application in the Body Shop and Trim Shop of adhesives and sealers to various vehicle parts, constructed in 1989.**

(~~k~~ **l**) Three (3) storage tanks, identified collectively as Unit 011, and including the following equipment:

***

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

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

D.7.1 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to PSD (79) 1651, issued July 30, 1987 and revised July 26, 1989, and 326 IAC 2-2-3, BACT for VOC for the facilities described in this section is the following:

(a) Purge solvent capture systems will be utilized each time that any coating application equipment is purged. The purge solvent capture systems shall have a minimum overall capture efficiency of at least eighty percent (80%). Collected purge solvent shall be retained in closed conveyances to the Permittee's purge solvent reclamation system for on-site reclamation and recycling or in closed containers until such time as they are shipped offsite for disposal or recycling.

(b) The 15,000-gallon gasoline storage tank (one of three tanks identified as 011) shall be equipped with:

(1) a submerged fill pipe,

(2) pressure relief valve set to 0.7 psi or orifice of 0.5 inches in diameter, and

(3) a Stage I vapor balance system between the tank and transport.

Tank trucks shall not be unloaded unless they are properly equipped and connected to the vapor balance system and the system is in operation.

Compliance with these limitations, and those contained in Conditions D.1.3, D.2.1, D.4.1, D.5.1, D.6.1, and D.8.1, will satisfy the requirements of 326 IAC 2-2 and 326 IAC 8-1-6.

D.7.2 Prevention of Significant Deterioration (PSD) - Best Available Control Technology for Volatile Organic Compounds (VOC) [326 IAC 2-2]

Pursuant to 326 IAC 2-2-3, the VOC BACT for the Trim Line, identified as Unit 010 shall be the following:

(a) The monthly volume weighted average of the VOC content of the adhesives and other materials used in the Trim Line, Unit 010 for window installation shall not exceed 0.40 pounds of VOC per gallon of coating, as applied.

(b) The monthly volume weighted average of the VOC content of the adhesives and sealers used in the Trim Line, Unit 010 excluding window installation materials shall not exceed 0.30 pounds of VOC per gallon of coating, as applied.

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

D.7.~~3~~**4** Record Keeping Requirements

(a) Pursuant to 326 IAC 12, the Permittee shall maintain records of the dimensions and an analysis showing the capacity of the 15,000-gallon gasoline storage tank. These records shall be maintained for the life of the source.

(b) To document the compliance status with Condition D.7.2, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limit established in Condition D.7.2. Records necessary to demonstrate the compliance status shall be available not later than 30 days of the end of each compliance period.

(1) The VOC content of each coating/adhesive (as applied).

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

(2) The volume weighted average VOC content of the coatings/adhesives used (as applied) for each month.

(3) The monthly coatings/adhesives usage in gallons.

(~~b~~**c**) ~~All records shall be maintained in accordance with~~ Section C - General Record Keeping Requirements, ~~of this permit~~ **contains the Permittee's obligations with regard to the records required by this condition**.

D.7.5 Reporting Requirements

A quarterly report of the monthly volume weighted average of the VOC content of the adhesives used in the Trim Line, unit 010 for window installation, and all the other adhesives used and the quarterly summary of the information to document the compliance status with Condition D.7.2, shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1 (34).

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Quarterly Part 70 Usage Report

Source Name:	**Subaru of Indiana Automotive, Inc.**
Source Address:	**5500 State Road 38 East, Lafayette, Indiana**
Part 70 Permit No.:	**T 157-5906-00050**
Facilities:	**ED Coating Line, Unit 001**
Parameter:	**Actual VOC Content**
Daily Limit:	**ED Coating Line - 0.4 pounds of VOC/gallon of applied coating solids (lb/gacs); on a daily basis**

Month: ________________ **Year:** ______________

Day	Daily VOC Usage (lb/gacs)	**Day**	Daily VOC Usage (lb/gacs)
1		**17**	
2		**18**	
3		**19**	
4		**20**	
5		**21**	
6		**22**	
7		**23**	
8		**24**	
9		**25**	
10		**26**	
11		**27**	
12		**28**	
13		**29**	
14		**30**	
15		**31**	
16		**no. of deviations**	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Quarterly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: Topcoat #1 Booth, Topcoat #2 Booth, Topcoat #3 Booth, Intermediate Coating Booth
Parameter: Actual VOC Content
Limits: For Combined Topcoat #1 Booth, Topcoat #2 Booth - 12.3 pounds of VOC/gallon of applied coating solids (lb/gacs); based on a daily volume weighted average.
For Topcoat #3 Booth – 10.6 lbs/gacs, based on a daily volume weighted average.
For Intermediate Coating Booth – 8.76 lbs/gacs, based on a daily volume weighted average.

Month: __________________ **Year:** _______________

Day	Combined Daily Volume Weighted Average VOC Usage for Topcoat #1 Booth, Topcoat #2 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Topcoat #3 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Intermediate Coating Booth (lbs/gacs)	Day	Combined Daily Volume Weighted Average VOC Usage for Topcoat #1 Booth, Topcoat #2 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Topcoat #3 Booth (lbs/gacs)	Daily Volume Weighted Average VOC Usage for Intermediate Coating Booth (lbs/gacs)
1				17			
2				18			
3				19			
4				20			
5				21			
6				22			
7				23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			
16				no. of deviations			

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Quarterly Part 70 Usage Report

Source Name: **Subaru of Indiana Automotive, Inc.**
Source Address: **5500 State Road 38 East, Lafayette, Indiana**
Part 70 Permit No.: **T 157-5906-00050**
Facilities: **Trim Line, Unit 010**
Parameter: **Actual VOC Content**
Limits: **For Trim Line, unit 010 window installation adhesives -, 0.40 pounds of VOC per gallon of coating, as applied, based on a monthly volume weighted average**

For all the other adhesives used in the Trim Line, unit 010, excluding window installation materials - 0.30 pounds of VOC per gallon of coating, as applied based on a monthly volume weighted average

Quarter: __________ **Year:** __________

Operation	**Month 1:** ________ **Volume Weighted Average VOC Usage** (pounds of VOC/gallon as applied)	**Month 2:** ________ **Volume Weighted Average VOC Usage** (pounds of VOC/gallon as applied)	**Month 3:** ________ **Volume Weighted Average VOC Usage** (pounds of VOC/gallon as applied)
Trim Line - Unit 010 Window Installation Adhesives			
Trim Line, unit 010- All Other Adhesives Excluding Window Installation Adhesives			

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Quarterly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: Sealing and PVC Undercoating Line, identified as Unit 002 (PVC Coating Booths #1 and #2)
Parameter: Actual VOC Content
Limit: Sealing and PVC Undercoating Line, Unit 002 (PVC Coating Booths #1 and #2) – 0.30 lbs/gacs, based on a daily volume weighted average

Month: __________________ **Year:** _______________

Day	Daily Volume Weighted Average VOC Usage for Sealing and PVC Undercoating Line, Unit 002 (lbs/gacs)	Day	Daily Volume Weighted Average VOC Usage for Sealing and PVC Undercoating Line, Unit 002 (lbs/gacs)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
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

Quarterly Part 70 Usage Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana
Part 70 Permit No.: T 157-5906-00050
Facilities: PBL Coating Booth
Parameter: Actual VOC Content
Limit: PBL Coating Booth – 38.2 lbs/gacs, based on a daily volume weighted average

Month: __________________ **Year:** _______________

Day	Daily Volume Weighted Average VOC Usage for PBL Coating Booth (lbs/gacs)	Day	Daily Volume Weighted Average VOC Usage for PBL Coating Booth (lbs/gacs)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		no. of deviations	

☐ No deviation occurred in this month.
☐ Deviation/s occurred in this month.
Deviation has been reported on: ____________________________

Submitted by: ____
Title/Position: ____
Signature: ____
Date: ____
Phone: ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Source-wide
Parameter: # vehicles produced
Limit: ~~Less than~~ **Not to exceed 310,000** ~~262,000~~ vehicles per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: ___________YEAR:________

Month	Vehicle Production This Month(# vehicles)	Vehicle Production for Past 11 Months (# vehicles)	Total Vehicle Production for 12 Month Period (# vehicles)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Source-wide surface coating operations, associated purge solvent operations and wiping/cleaning solvents, and storage
Parameter: VOC
Limit: Shall not exceed ~~1,087~~ **1,084.5** tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ____________YEAR:

Month	VOC Emissions This Month (tons)	VOC Emissions for Past 11 Months (tons)	VOC Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position: ____

Signature: ____

Date: ____

Phone: ____

~~Attach a signed certification to complete this report.~~

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Data Section

Part 70 Quarterly Report

Source Name: Subaru of Indiana Automotive, Inc.
Source Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Mailing Address: 5500 State Road 38 East, Lafayette, Indiana 47903
Part 70 Permit No.: T157-5906-00050
Facility: Topcoat System, identified as Unit 003
Parameter: VOC
Limit: Shall not exceed ~~415.5~~ **393** tons VOC per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER: ___________YEAR:

Month	VOC Emissions This Month (tons)	VOC Emissions for Past 11 Months (tons)	VOC Emissions for 12 Month Period (tons)
Month 1			
Month 2			
Month 3			

Submitted by: ____

Title / Position:____

Signature: ____

Date: ____

Phone:____

~~Attach a signed certification to complete this report~~

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Prevention of Significant Deterioration/Significant Source Modification/ No. 157-29566-00050 and Significant Permit Modification No. 157-29567-00050. The staff recommends to the Commissioner that this Prevention of Significant Deterioration/Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Aida P. De Guzman 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) 233-4972 or toll free at 1-800-451-6027 extension *(*3-4972*)*.

(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's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 1 - PTE for the New Natural Gas-Fired Heaters					
Air Pollutant	**$PM/PM_{10}/PM_{2.5}$**	**SO_2**	**NO_X**	**CO**	**VOC**
Emission Factors (lbs/MMcf) [1]	7.6	0.6	100	84	5.5

Plantwide Air Pollutant Emission Estimates

Calculation Method:
Emissions (tons/yr) = Emission Factors (lbs/MMcf) x Usage (MMcf/yr) / 2000 (lbs/ton)

Emissions	Usage (MMcf/hr) [3]	Hours per Year	Usage (MMcf/yr)	Pollutant (tons/yr)				
				$PM/PM_{10}/PM_{2.5}$	**SO_2**	**NO_X**	**CO**	**VOC**
Potentials To Emit - Tons/year								
Natural Gas Sources - Proposed Changes to Twotone and Bumper Systems								
Natural Gas Combustion - Heated Flash[2]	0.0075	8760	65.70	0.25	0.02	3.29	2.76	0.18
GRAND TOTAL (tons/year)	**0.0075**	**--**	**65.70**	**0.25**	**0.02**	**3.29**	**2.76**	**0.18**

Calculation Method:
Emissions (lbs/hr) = Emission Factors (lbs/MMcf) x Usage (MMcf/yr) / 8760 (hours/yr)

Emissions	Usage (MMcf/hr) [3]	Hours per Year	Usage (MMcf/yr)	Pollutant (lbs/hr)				
				$PM/PM_{10}/PM_{2.5}$	**SO_2**	**NO_X**	**CO**	**VOC**
Potentials To Emit - lbs/hr								
Natural Gas Sources - Proposed Changes to Twotone and Bumper Systems								
Natural Gas Combustion - Heated Flash[2]	0.0075	8760	65.70	0.057	0.005	0.750	0.630	0.041
GRAND TOTAL (lbs/hr)	**0.01**	**--**	**65.70**	**0.057**	**0.005**	**0.750**	**0.630**	**0.041**

Note:
[1] Emission Factors for Natural Gas Combustion obtained from AP-42 Tables1.4-1 and 1.4-2, July 1998.
[2] There will be three new heated flash burners, each rated at 2.5 MMBtu/hr (One for modified two-tone and two for modified bumper system). These burners are required to provide additional curing of the waterborne materials prior to oven curing.
[3] Heating Value - 1 MMCF/1,000 MMBtu.

[4] Two-Tone system is being converted to a waterborne basecoat and solventborne clearcoat body paint system (herein referred to as Topcoat #3). The bumper system (excludes Fascia system) is being physically changed to accommodate waterborne primer and waterborne basecoat materials. Solventborne clearcoat will not be affected by this change.

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 1a- HAPs PTE for the New Natural Gas-Fired Heaters

REGULATED AIR POLLUTANT	Emission Factor (lbs/MMBtu)	AIR EMISSIONS - NATURAL GAS COMBUSTION	
		(LB/HR)	(TONS/YR)
Benzene	2.10E-06	1.58E-05	6.90E-05
Dichlorobenzene	1.20E-06	9.00E-06	3.94E-05
Formaldehyde	7.50E-05	5.63E-04	2.46E-03
Hexane	1.80E-03	1.35E-02	5.91E-02
Naphthalene	6.10E-07	4.58E-06	2.00E-05
Toluene	3.40E-06	2.55E-05	1.12E-04
Arsenic	2.00E-07	1.50E-06	6.57E-06
Beryllium	1.20E-08	9.00E-08	3.94E-07
Chromium	1.40E-06	1.05E-05	4.60E-05
Cobalt	8.40E-08	6.30E-07	2.76E-06
Manganese	3.80E-07	2.85E-06	1.25E-05
Mercury	2.60E-07	1.95E-06	8.54E-06
Nickel	2.10E-06	1.58E-05	6.90E-05
Selenium	2.40E-08	1.80E-07	7.88E-07
		worst single HAP	5.91E-02
		Total Combined HAPs	0.062

* There will be three new heated flash burners, each rated at 2.5 MMBtu/hr (One for modified two-tone and two for modified bumper system).

** Heating Value - 1 MMCF/1,000 MMBtu.

Methodology:
PTE, lbs/hr = Total maximum heat input, MMBtu/hr x Emission Factor, lb/MMBtu
PTE, tons/yr = Total maximum heat input, MMBtu/hr x Emission Factor, lb/MMBtu x 8760 hrs/yr * ton/2000lbs

Notes:
1) Hours of operation/year= 8760
2) Maximum Heat Input = 0.0075 mmscf/hr

7.5	MMBtu/hr
65700	MMBtu/yr

3) Emissions shown are based on using 100% natural gas.

4) Emission Factor from AP-42 , Chapter 1: External Combustion Sources, Section 1.4: Natural Gas Combustion, 7/98

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 2 -Actual VOC EMISSIONS - 2008

Process	January	February	March	April	May	June	July	August	September	October	November	December	Total (lbs)	Total (tons)
Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	2,318.40	2,252.29	2,144.26	2,269.87	2,175.46	2,241.24	1,205.91	2,173.94	2,202.90	2,272.25	1,606.56	1,212.52	24,075.59	12.04
Unit 002 - Sealing and PVC Undercoating Line	10,798.73	11,180.51	10,432.57	11,497.57	10,611.18	10,357.93	5,793.50	11,332.01	12,414.80	12,427.90	10,019.60	8,384.74	125,251.03	62.63
Unit 002 - Sealing and PVC Undercoating Line (revised - accounts for control)*	**4,785.22**	**5,062.30**	**4,663.05**	**5,261.84**	**4,824.34**	**4,785.81**	**2,671.46**	**5,176.17**	**5,749.20**	**5,967.67**	**4,773.64**	**4,060.24**	**57,780.96**	**28.89**
Unit 003 - Topcoat System (Topcoat 1)	11,553.01	12,612.56	11,816.82	13,118.71	12,055.10	12,232.96	6,861.50	12,251.27	13,178.05	15,292.47	11,624.35	9,778.78	142,375.60	71.19
Unit 003 - Topcoat System (Topcoat 2)	28,794.21	26,688.59	26,057.81	30,072.42	29,937.18	28,017.43	9,556.89	18,052.39	15,409.24	15,786.60	10,363.38	8,810.10	247,546.23	123.77
Unit 004 - Intermediate (Surfacer) Coating Line	23,415.50	22,650.03	22,070.83	24,722.91	24,087.80	22,932.21	12,216.99	22,585.87	22,349.15	23,747.63	17,831.53	14,536.67	253,147.13	126.57
Unit 005 - Plastic Bumper Coating Line (PBL)	14,666.98	14,295.67	13,231.44	16,498.36	16,491.91	14,995.20	8,181.04	15,704.49	13,788.74	13,640.27	8,977.89	8,041.44	158,513.43	79.26
PFPLS#2 - Plastic Fascia Paint Line System	6,526.19	6,361.15	5,824.05	5,114.27	5,277.36	5,865.99	3,278.67	5,906.73	6,002.59	6,715.21	5,209.65	4,309.08	66,390.94	33.20
Unit 006 - Anticorrosion Coating	4,223.11	3,037.02	2,151.82	4,640.88	1,929.64	2,183.84	832.97	2,218.99	2,217.08	1,416.96	1,269.12	1,812.82	27,934.25	13.97
Unit 007 - Final Repair (Touchup) Painting	18.90	15.48	14.91	15.82	15.25	15.69	9.57	17.61	17.57	21.78	6.51	4.96	174.07	0.09
Unit 010 - Application of Adhesives	1,896.46	1,826.21	1,723.66	1,974.13	1,953.62	1,911.33	1,036.76	1,954.11	1,884.11	1,956.12	1,445.35	1,249.15	20,811.00	10.41
Unit 012 - Purge Solvent Recovery System (Line 2)	5,203.13	5,199.49	4,461.93	4,887.24	5,291.52	4,682.44	2,698.72	9,075.20	9,542.96	10,268.87	7,663.93	6,110.15	75,085.58	37.54
Unit 012 - Purge Solvent Recovery System (Line 1)	3,468.66	3,311.00	3,416.11	4,261.08	3,726.18	4,146.63	2,334.63	3,713.34	4,304.29	4,585.76	3,871.59	3,346.03	44,485.30	22.24
Total (lbs)	**106,869.78**	**103,311.78**	**97,576.70**	**112,837.54**	**107,765.38**	**104,010.76**	**50,885.11**	**98,830.11**	**96,645.88**	**101,671.59**	**74,643.49**	**63,271.94**	**1,118,320.06**	**559.16**
Total (tons)	**53.43**	**51.66**	**48.79**	**56.42**	**53.88**	**52.01**	**25.44**	**49.42**	**48.32**	**50.84**	**37.32**	**31.64**	**559.16**	**--**

VEHICLE PRODUCTION 2008

Vehicle Production	January	February	March	April	May	June	July	August	September	October	November	December	Total
SIA 2	8,424	8,186	7,724	9,220	9,299	8,883	4,620	9,178	8,059	7,797	5,353	4,748	91,491
SIA 1	8,299	7,924	7,515	8,296	7,862	7,946	4,529	7,921	8,465	9,430	7,309	6,164	91,660
Total	16,723	16,110	15,239	17,516	17,161	16,829	9,149	17,099	16,524	17,227	12,662	10,912	183,151

Data was based on actual vehicle production and VOC content of the materials.

Notes:

* Includes adjustment for VOC retention in Sealing and PVC Undercoating materials. This was approved by IDEM as part of the 2006 requests for significant source modification.

Table 2a - Actual VOC EMISSIONS - 2009

Process	January	February	March	April	May	June	July	August	September	October	November	December	Total (lbs)	Total (tons)
Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	1,363.93	1,729.83	2,131.31	1,249.41	1,222.27	2,053.19	1,486.01	2,313.14	2,562.23	2,962.09	2,498.29	2,143.40	23,715.10	11.86
Unit 002 - Sealing and PVC Undercoating Line*	**4,246.41**	**5,252.19**	**4,856.47**	**3,646.15**	**3,502.33**	**4,593.12**	**2,916.39**	**5,116.56**	**5,161.16**	**6,679.12**	**5,956.53**	**4,842.07**	**56,768.49**	**28.38**
Unit 003 - Topcoat System (Topcoat 1)	11,632.36	14,766.01	16,676.95	13,816.24	13,281.56	15,876.05	10,124.62	16,017.88	16,404.52	20,128.10	18,547.47	14,581.87	181,853.64	90.93
Unit 003 - Topcoat System (Topcoat 2)	9,097.13	11,209.31	12,662.09	4,859.33	5,195.54	15,752.70	13,042.94	21,538.95	24,552.90	25,951.04	21,983.90	21,191.28	187,037.10	93.52
Unit 004 - Intermediate (Surfacer) Coating Line	14,988.84	17,940.41	19,676.34	12,936.01	12,520.64	19,449.24	13,448.36	21,922.07	24,043.01	27,589.77	23,529.08	20,586.90	228,630.66	114.32
Unit 005 - Plastic Bumper Coating Line (PBL)	7,783.73	10,058.24	11,051.33	4,411.48	5,865.06	14,459.31	11,357.71	18,031.05	19,907.44	20,659.79	17,713.81	16,953.41	158,252.37	79.13
Unit 006 - Anticorrosion Coating	1,174.17	1,174.17	1,353.68	777.28	1,608.67	1,020.20	596.14	1,679.73	1,383.87	1,821.63	1,673.70	1,036.68	15,299.91	7.65
PFPLS#2 - Plastic Fascia Paint Line System	5,535.02	6,567.01	7,273.87	6,374.14	5,952.57	7,020.86	4,306.64	6,765.68	6,863.35	8,404.69	7,735.59	6,194.34	78,993.76	39.50
Unit 007 - Final Repair (Touchup) Painting	5.13	6.78	5.31	4.67	5.99	5.52	4.81	6.97	6.54	7.33	6.96	6.20	72.22	0.04
Unit 010 - Application of Adhesives	1,121.18	1,389.82	1,537.98	834.98	793.14	1,566.16	1,170.17	1,957.80	2,152.30	2,392.39	2,109.52	1,945.09	18,970.52	9.49
Unit 012 - Purge Solvent Recovery System (Line 2)	6,237.92	7,579.16	8,451.70	4,189.18	5,216.49	6,951.70	4,900.07	7,504.97	7,942.75	8,397.74	7,256.64	6,332.15	80,960.49	40.48
Unit 012 - Purge Solvent Recovery System (Line 1)	3,052.17	3,397.69	3,616.87	4,193.60	3,314.32	3,631.46	2,208.96	3,340.93	3,424.31	4,056.03	4,165.22	3,143.24	41,544.78	20.77
Total (lbs)	**66,237.98**	**81,070.63**	**89,293.90**	**57,292.47**	**58,478.58**	**92,379.50**	**65,562.82**	**106,195.75**	**114,404.36**	**129,049.72**	**113,176.71**	**98,956.62**	**1,072,099.04**	**536.05**
Total (tons)	**33.12**	**40.54**	**44.65**	**28.65**	**29.24**	**46.19**	**32.78**	**53.10**	**57.20**	**64.52**	**56.59**	**49.48**	**536.05**	**--**

VEHICLE PRODUCTION 2009

Vehicle Production	January	February	March	April	May	June	July	August	September	October	November	December	Total
SIA 2	4,380	5,507	6,122	2,041	1,798	6,506	5,443	9,299	10,833	11,542	9,903	9,588	82,962
SIA 1	6,184	7,479	8,196	6,765	6,562	7,886	4,560	7,366	7,600	9,453	8,787	7,088	87,926
Total	10,564	12,986	14,318	8,806	8,360	14,392	10,003	16,665	18,433	20,995	18,690	16,676	170,888

Data was based on actual vehicle production and VOC content of the materials.

Notes:

*Includes adjustment for VOC retention in Sealing and PVC Undercoating materials. This was approved by IDEM as part of the 2006 request for significant source modification.

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Natural Gas Usage Historical Usage

Month/Year	Gas Usage (mmscf/month)
Jan-08	132.01
Feb-08	120.80
Mar-08	86.12
Apr-08	63.93
May-08	48.40
Jun-08	26.82
Jul-08	16.23
Aug-08	27.09
Sep-08	32.15
Oct-08	62.13
Nov-08	75.56
Dec-08	85.41
Jan-09	101.73
Feb-09	85.43
Mar-09	69.95
Apr-09	48.67
May-09	29.10
Jun-09	23.09
Jul-09	17.19
Aug-09	23.33
Sep-09	29.65
Oct-09	59.34
Nov-09	65.82
Dec-09	93.56

Table 3 - Baseline Actual to Projected Actual Test

Pollutant	Emission Factor (lb/mmscf)	January 2008 - December 2009 Baseline Actual Emissions	Projected Actual Emissions (tons/year) Based on Max Heat Input	Projected Net Change (tons/year)
$PM/PM_{10}/PM_{2.5}$	7.6	2.7	4.7	2.0
NO_X	100	35.6	62.3	26.7
CO	84	29.9	52.3	22.5
SO_2	0.6	0.2	0.4	0.2
VOC	5.5	**1.96**	3.4	1.5

VOC Baseline Actual - 2008	**2.1**
VOC Baseline Actual - 2009	**1.8**

Emission factors are from AP-42, Tables 1.4-1, 1.4-2, July 1998.

PROJECTED ACTUALS
Capacity Increase = 75.12%
(average 177,020 vehicles during 2008/2009 to 310,000 vehicles per year)

Data based on monthly emission spreadsheets

1/2008 - 12/2008 Usage	**776.6411**	**mmscf**
1/2009 - 12/2009 Usage	**646.8588**	**mmscf**
Time Period Average Usage	**711.74995**	**mmscf**
Permitted Natural Gas Usage =	**2380**	**mmscf**

Based on N. G. Limitation (ton/yr)	
	PM/PM10?PM2.5
6.5	**9.0**

Notes:

* Baseline actuals based on 2-year natural gas usage average (January 2008 - December 2009). Baseline Tons/year = Average Usage (mmscf) x Emission Factor (lb/mmscf) / 2000

** Based on permitted maximum of 2380 million standard cubic feet of natural gas. Projected Actuals Tons/year = Permitted Usage (mmscf) x Emission Factor (lb/mmscf) / 2000

****PM, PM_{10} and $PM_{2.5}$ assumed to have the same identical emission rates, which is a conservative overestimate.

Heat Input Capacity MMBtu/hr		Potential Throughput MMCF/yr
351.7	Total source Heat Input	3081.2

	Potentil to Emit					
	PM*	PM10/PM2.5	SO2	NOx	CO	VOC
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	84.0	5.5
Potential to Emit, tons/yr	0.0	11.7	0.9	154.1	129.4	8.5

	Hexane	Benzene	Dichlorobenzene	Formaldehyde	Toluene
Emission Factor in lb/MMcf	1.80E+00	2.1E-03	1.2E-03	7.5E-02	3.4E-03
Potential Emission in tons/yr	2.77E+00	3.24E-03	1.85E-03	1.16E-01	5.24E-03

		HAPs - Metals			
	Manganese	Lead	Cadmium	Chromium	Nickel
Emission Factor in lb/MMcf	3.80E-04	5.0E-04	1.1E-03	1.4E-03	2.1E-03
Potential Emission in tons/yr	5.85E-04	7.70E-04	1.69E-03	2.16E-03	3.24E-03

Worst Single HAP (hexane)	2.77E+00
Combined HAPs	2.91E+00

Methodology is the same as page 1.

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN ZIP: 5500 State Rd 38 East Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant ID No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 4 - Potential to Emit After Control at New Production Rate

Operation	Potential lbs VOC/vehicle	Proposed New Production (vehicles/year)	Potential Rate (tons/year)
Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	0.15	310,000	23.4
Unit 002 - Sealing and PVC Undercoating Line	0.56	310,000	86.0*
Unit 003 - Topcoat System (Topcoat 1)	2.10	110,000	115.5
Unit 003 - Topcoat System (Topcoat 2 and Topcoat 3)**	2.78	200,000	277.5
Unit 004 - Intermediate (Surfacer) Coating Line	1.40	310,000	217.0
Unit 005 - Plastic Bumper Coating Line (PBL)	0.73	200,000	73.3
PFPLS#2 - Plastic Fascia Paint Line System	1.87	110,000	102.6
Unit 006 - Anticorrosion Coating	0.73	310,000	113.15
Unit 007 - Final Repair (Touchup) Painting	--	310,000	0.1
Unit 010 - Application of Adhesives	0.11	310,000	17.1
Unit 012 - Purge Solvent Recovery System	0.35	310,000	54.3
Plantwide natural gas Combustion	--	310,000	3.4
Storage Tanks	--	--	1.1
Total	--	--	1084.3

Note: lb/vehicle emissions are based on current worst case coatings.

Unit 002 potential rate reflects 2006 permitted value plus the additional usage from the LASD Project - Sound Deadener Change (Minor Source Modification 157-29321-00050).

Includes existing Topcoat 2 and modified Twotone Paint Line System. Potential VOC rate for the Twotone System is provided in Table 2-4A of this application. Individual emission estimates for Topcoat 2 and 3 have been combined, to be consistent with the 2006 modification project and one overall VOC emission rate limitation of 393 tons/year for the Topcoat System.

Methodology:
Lbs/Vehicle x Vehicles/Year x 1/2000 = Tons VOC/Year

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 5- Twotone Booth Actual to Potential Test

Material Description	Average Usage (gal/job)*	VOC Content (lbs/gal)**	VOC Emissions (Uncontrolled)		VOC Emissions (Controlled)	
			Booth VOC (TPY)	Oven VOC (TPY)	Booth VOC (TPY)	Oven VOC (TPY)
Worst Case BC	0.497	1.36	14.6	3.6	14.6	0.182
Worst Case Clearcoat	0.56	4.12	49.8	12.5	49.8	0.623
TOTALS			64.4	16.1	64.4	0.8

Note: Past Actual Emissions = 0

Job/year 54,000

Split: 80% Booth
20% Oven

Rated Destruction Efficiency: 95%

Catalytic oxidizer that is associated with the oven is existing and is required to achieve 90% VOC destruction efficiency. Since the 90% is the efficiency that can be verified during the stack test, this efficiency will be used in the calculations.

Address City IN ZIP: 5500 State Rd 38 East Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant ID No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 6 - Actual to Potential Test

EMISSION UNIT	VOC BASELINE ACTUALS (TONS/YEAR)*	VOC POTENTIALS (TONS/YEAR)	VOC EMISSION CHANGE (TONS/YEAR)
*** Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	11.95	23.4	11.5
** Unit 002 - Sealing and PVC Undercoating Line	28.64	86.0	57.4
** Unit 003 - Topcoat System (Topcoat 1)	81.06	115.5	34.4
*** Unit 003 - Topcoat System (Topcoat 2 and Topcoat 3)	108.65	277.5	168.9
** Unit 004 - Intermediate (Surfacer) Coating Line	120.44	217.0	96.6
Unit 005 - Plastic Bumper Coating Line (PBL)	79.19	73.3	-5.9
** PFPLS#2 - Plastic Fascia Paint Line System	57.86	102.6	44.7
** Unit 006 - Anticorrosion Coating	10.81	113.15	102.3
** Unit 007 - Final Repair (Touchup) Painting	0.06	0.1	0.0
*** Unit 010 - Application of Adhesives	9.95	17.1	7.2
** Unit 012 - Purge Solvent Recovery System (Line 2)	39.01	54.3	15.3
** Plantwide Natural Gas Combustion	1.96	3.4	1.4
Storage Tanks	0.42	1.1	0.7
TOTALS (TONS/YEAR)	**550.0**	**1084.5**	**534.5**

Notes:
* Baseline actuals based on time period of January 2008 - December 2009.

** Emission unit will experience an increase in emissions from increased utilization.

*** Emission units will experience an increase in emissions as a result of a physical change and/or increased utilization. There will be no physical change to Topcoat 2 Coating Line but this line will experience an increase in emissions related to the Project because of increased utilization. Topcoat 3 Booth will receive a physical change that reduces emissions on a unit basis but will experience an increase in emissions as a result of increased utilization.

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN ZIP: 5500 State Rd 38 East Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant ID No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Table 7 - Actual to Potential Test - PM/PM10/PM2.5

Historical Actual PM Emissions*

Calendar Year	Vehicle Production**	PM Emissions (tons/year)**	PM Emissions (lbs/vehicle)
2000	208,776	6.90	0.07
2001	186,215	8.14	0.09
2002	132,422	6.22	0.09
2003	122,227	5.51	0.09
2004	118,274	5.17	0.09
2005	118,886	5.72	0.10
2006	110,272	5.04	0.09
2007	147,161	5.48	0.07
2008	183,152	7.07	0.08
2009	170,888	6.29	0.07

Baseline Actual PM Emissions*

Calendar Year	PM Emissions (tons/year)
2008	7.07
2009	6.29
Two-Year Average	6.68

*PM emission rates assume PM_{10} and $PM_{2.5}$ are equivalent. For example, 1 ton/year of PM is conservatively assumed to be 1 ton/year of PM_{10} and 1 ton/year of $PM_{2.5}$

**Vehicle production and PM Emissions based on data submitted in ISTEPS for 2000-2009

Potential Emission from Paint Overspray ***

0.085 lbs of PM/Vehicle x 310,000 vehicles/year = 23,350 lbs/year x 1 ton/2000 lbs = **13.2** **tons/year PM/PM_{10}/$PM_{2.5}$**

***Reflects actual material usage, actual weight percent solids, actual transfer efficiency and removal efficiency of the paint overspray collection systems.

Potential Emissions Minus Baseline Actual Emissions (ATP) Test

13.2 tons/year - 6.68 tons/year average = **6.5** **tons/year PM/PM_{10}/$PM_{2.5}$**

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

EMISSION CHANGES	VOC EMISSIONS (TONS/YEAR)	NO_X EMISSIONS (TONS/YEAR)	CO EMISSIONS (TONS/YEAR)	PM EMISSIONS (TONS/YEAR)	PM_{10} EMISSIONS (TONS/YEAR)	$PM_{2.5}$ EMISSIONS (TONS/YEAR)	SO_2 EMISSIONS (TONS/YEAR)*
New Emission Units							
PTE - New Combustion Equipment	**0.2**	**3.3**	**2.8**	**0.3**	**0.3**	**0.3**	**0.02**
Proposed Changes - Existing Emission Units							
PTE - Coating Lines	1,084.7	--	--	13.2	13.2	13.2	--
Baseline Actuals - Coating	550.0	--	--	6.7	6.7	6.7	--
-- **Net Increase** - Coating	**534.7**			**6.5**	**6.5**	**6.5**	
PAE - Existing Combustion Units	3.4	62.3	52.3	4.7	4.7	4.7	0.4
Baseline Actuals - Combustion	2.0	35.6	29.9	2.7	2.7	2.7	0.2
-- **Net Increase** - Combustion	**1.4**	**26.7**	**22.4**	**2.0**	**2.0**	**2.0**	**0.2**
Total Change	**536.3**	**30.0**	**25.2**	**8.8**	**8.8**	**8.8**	**0.2**
Significant Emission Threshold (tons/year)	40	40	100	25	15	10	40
Change Significant?*	YES	NO	NO	NO	NO	NO	NO

The proposed project will result in a significant emission increase of VOC emissions only. Since the proposed change in VOC emissions will exceed 40 tone per year, the proposed project is subject to review under the Prevention of Significant Deterioration (PSD) regulations (326 IAC 2-2 and 40 CFR 52.21).

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Part 70 Permit Emission Unit	Component Emission Unit Description	Air Pollutant	PTE Prior to Modification				
			Lbs VOC/Vehicle	Production Rate	Tons VOC/Year (Controlled)	Overall Control Efficiency	Tons VOC/Year (Uncontrolled)
Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	ED Body tank and Curing Oven	VOC	0.15	262,000	19.8	0.63	53.5
Unit 003 - Topcoat System****	Topcoat #1 Booth and Oven	VOC	1.59	93,000	73.7	0.18	89.9
	Topcoat #2 Booth and Oven	VOC	1.59	169,000	134.0	0.18	163.4
	Twotone and Repair/Topcoat #3 Booth and Oven*	VOC	******Combined with Topcoat #2				
Unit 004 - Intermediate (Surfacer) Coating Line	Intermediate Coating Booth and Oven	VOC	1.40	262,000	183.4	0.18	223.7
Unit 005 - Plastic Bumper Coating Line (PBL)	PBL Booth and Oven	VOC	1.15	262,000	151.3	0.18	184.5
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Booth and Curing Oven	VOC	1.56	100,000	77.86	0.21	98.6
Unit 006 - Anticorrosion	Anticorrosion Booth	VOC	0.73	262,000	95.63	-	95.63
Unit 007 - Final Repair (Touchup)	Final Repair (Touchup)	VOC	-	262,000	0.1	-	0.1
Unit 010 - Application of Adhesives	Application of Adhesives	VOC	0.11	262,000	14.41	-	14.41
Unit 012 - Purge Solvent Recovery System	Purge solvent	VOC	0.35	262,000	45.85		45.85
Unit 011 - Three (3) Storage Tanks**	Stoarge Tanks	VOC	-	-	N/A	N/A	N/A
	Purge Thinner Storage Tank, 5,000 gallons	VOC	N/A	N/A	1.1	-	1.1
TOTAL VOC					**797.1**		**970.5**

Part 70 Permit Emission Unit	Component Emission Unit Description	Air Pollutant	Calculation of PTE				
			Lbs PM/Vehicle***	Production Rate	Tons PM/Year (Controlled)	Overall Control Efficiency	Tons PM/Year (Uncontrolled)
Unit 002 - Sealing and PVC Undercoating Line	PVC Coating Booth #1	PM	0.018	262,000	2.4	0.98	120.0
	PVC Coating Booth #2	PM	0.018	262,000	2.4	0.98	120.0
Unit 003 - Topcoat System	Topcoat #1 Booth	PM	0.037	93,000	1.7	0.98	85.2
	Topcoat #2 Booth	PM	0.035	169,000	3.0	0.98	148.3
	Twotone and Repair/Topcoat #3 Booth	PM	******Combined with Topcoat #2				
Unit 004 - Intermediate (Surfacer) Coating Line	Intermediate Coating Booth	PM	0.011	262,000	1.5	0.98	75.0
Unit 005 - Plastic Bumper Coating Line (PBL)	PBL Paint Booth	PM	0.018	262,000	2.3	0.98	115.0
Unit 006 - Anticorrosion Coating	Black Coat and Wax Booth	PM	0.006	262,000	0.75	0.98	37.5
	Anticorrosion Coating Booth	PM	0.006	262,000	0.75	0.98	37.5
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Paint Line Booth*****	PM	0.06	100,000	1.4	0.98	70.0
Unit 007 - Final Repair (touchup) Painting	Touchup Trim Booth	PM	0.004	262,000	0.5	0.98	25.0
TOTAL PM/PM10/PM2.5					**16.7**		**833.6**

Note: Calculation Method

VOC Controlled Tons/Year: Lbs VOC/Vehicle * Projected Production * (1/2000) = Tons/Year

VOC Uncontrolled Tons/Year: Tons/Year (Controlled) / (1 - Control Efficiency) = Tons/Year

* Part of Topcoat #1 and Topcoat #2 PTE estimates. Since the combination of all booths utilized in the Topcoat system (i.e., topcoat #1, topcoat #2 and Twotone) exceed the CAM applicability threshold, CAM has been determined to be applicable to the Topcoat system.

** No calculation of PTE performed. Potential emissions of VOC are considered negligible.

*** Based on weighted actual usage factor and permitted emission limit of 23.1 tons/year.

**** SIA Significant Source Modification request dated March 31, 2009 and Addendum on November 16, 2009 resulted in a revised VOC rate of 393.0 tons/year for the Topcoat System. The requested rate slightly alters the calculations.

***** Three separate materials are applied in the Fascia Paint Line system (primer, basecoat and clearcoat). Conservatively assumed as one booth for CAM Applicability purposes.

****** The Production Rate of Topcoat #2 (169,000) includes the Production Rate of Twotone and Repair/Topcoat #3 Booth and Oven.

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Part 70 Permit Emission Unit	Component Emission Unit Description	Air Pollutant	PTE After Modification				
			Lbs VOC/Vehicle	Production Rate	Tons VOC/Year (Controlled)	Overall Control Efficiency	Tons VOC/Year (Uncontrolled)
Unit 001 - Electrodeposition Coating of Vehicle Bodies (ED Coating Line)	ED Body tank and Curing Oven	VOC	0.15	310,000	23.4	0.63	63.3
Unit 002 - Sealing and PVC Undercoating Line	PVC Booths 1 and 2	VOC	0.56	310,000	86.0	N/A	86.0
Unit 003 - Topcoat System****	Topcoat #1 Booth and Oven	VOC	2.10	110,000	115.5	0.18	140.9
	Topcoat #2 Booth and Oven	VOC	2.78	200,000	278.0	0.18	339.0
	Twotone and Repair/Topcoat #3 Booth and Oven*	VOC	Combined with Topcoat #2				
Unit 004 - Intermediate (Surfacer) Coating Line	Intermediate Coating Booth and Oven	VOC	1.40	310,000	217	0.18	264.6
Unit 005 - Plastic Bumper Coating Line (PBL)	PBL Booth and Oven	VOC	0.73	200,000	73.00	0.18	89.0
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Booth and Curing Oven	VOC	1.87	110,000	102.85	0.21	130.2
Unit 006 - Anticorrosion	Anticorrosion Booth	VOC	0.73	310,000	113.15	-	113.15
Unit 007 - Final Repair (Touchup)	Final Repair (Touchup)	VOC	-	310,000	0.1	-	0.1
Unit 010 - Application of Adhesives	Application of Adhesives	VOC	0.11	310,000	17.05	-	17.05
Unit 012 - Purge Solvent Recovery System	Purge solvent	VOC	0.35	310,000	54.25	-	54.25
Unit 011 - Three (3) Storage Tanks**	Storage Tanks	VOC	-	-	1.1	-	1.1
	Purge Thinner Storage Tank, 5,000 gallons	VOC	N/A	N/A	N/A	N/A	N/A
TOTAL VOC					**1,081.4**		**1,298.6**

Part 70 Permit Emission Unit	Component Emission Unit Description	Air Pollutant	Calculation of PTE				
			Lbs PM/Vehicle***	Production Rate	Tons PM/Year (Controlled)	Overall Control Efficiency	Tons PM/Year (Uncontrolled)
Unit 002 - Sealing and PVC Undercoating Line	PVC Coating Booth #1	PM	0.018	310,000	2.8	0.98	142.0
	PVC Coating Booth #2	PM	0.018	310,000	2.8	0.98	142.0
Unit 003 - Topcoat System	Topcoat #1 Booth	PM	0.037	110,000	2.0	0.98	100.8
	Topcoat #2 Booth	PM	0.035	200,000	3.5	0.98	175.6
	Twotone and Repair/Topcoat# 3 Booth*	PM	0.026	54,000	0.7	0.98	35.1
Unit 004 - Intermediate (Surfacer) Coating Line	Intermediate Coating Booth	PM	0.011	310,000	1.8	0.98	88.7
Unit 005 - Plastic Bumper Coating Line (PBL)	PBL Paint Booth	PM	0.018	310,000	2.7	0.98	136.1
Unit 006 - Anticorrosion Coating	Black Coat and Wax Booth	PM	0.006	310,000	0.89	0.98	44.4
	Anticorrosion Coating Booth	PM	0.006	310,000	0.89	0.98	44.4
Plastic Fascia Paint Line System (PFPLS#2)	Fascia Paint Line Booth*****	PM	0.06	110,000	1.4	0.98	70.0
Unit 007 - Final Repair (touchup) Painting	Touchup Trim Booth	PM	0.004	310,000	0.6	0.98	29.6
TOTAL PM/PM10/PM2.5					**20.2**		**1008.5**

Methodology:

VOC Controlled Tons/Year: Lbs VOC/Vehicle * Projected Production * (1/2000) = Tons/Year

VOC Uncontrolled Tons/Year: Tons/Year (Controlled) / (1 - Control Efficiency) = Tons/Year

* Part of Topcoat #1 and Topcoat #2 PTE estimates. Since the combination of all booths utilized in the Topcoat system (i.e., topcoat #1, topcoat #2 and Twotone) exceed the CAM applicability threshold, CAM has been determined to be applicable to the Topcoat system.

** No calculation of PTE performed. Potential emissions of VOC are considered negligible.

*** Based on weighted actual usage factor and permitted emission limit of 23.1 tons/year.

**** SIA Significant Source Modification request dated March 31, 2009 and Addendum on November 16, 2009 resulted in a revised VOC rate of 393.0 tons/year for the Topcoat System. The requested rate slightly alters the calculations.

***** Three separate materials are applied in the Fascia Paint Line system (primer, basecoat and clearcoat). Conservatively assumed as one booth for CAM Applicability purposes.

Appendix A: Emissions Calculations
Green House Gases from Natural gas Combustion Units

Company Name: Subaru of Indiana Automotive, Inc.
Address City IN Zip: 5500 State Road 38 East, Lafayette, IN 47905
PSD/SSM No.: 157-29566
SPM No.: 157-29567
Plant No.: 157-00050
Reviewer: Aida De Guzman
Date Application Received: 16-Aug-2010

Air Pollutant	CO_2 (kg/MMBtu)	CH_4 (kg/MMBtu)	N_2O (kg/MMBtu)	High Heat Value (MMBtu/scf)
Emission Factors [1]	53.02	1.00E-03	1.00E-04	1.000E-03
CO2e Conversion Factors (Global Warming Potential) [1]	1	21	310	--

Air Pollutant Emission Estimates

Calculation Method:
Emissions (kg/yr) = Emission Factors (kg/MMBtu) x HHV (MMBtu/scf) x Usage (cf/yr)

Emissions	Usage (MMcf/hr) [3]	Hours per Year	Usage (MMcf/yr)	Usage (cf/yr)	Pollutant (kg/yr) CO_2	CH_4	N_2O
Potentials To Emit - kgs/year							
Natural Gas Sources - Proposed Changes to TwoTone and Bumper Systems							
Natural Gas Combustion - Heated Flash[2]	0.0075	8760	65.70	65,700,000.00	3,483,414.00	65.70	6.57
GRAND TOTAL (kg/year)	**0.0075**	**--**	**65.70**	**65,700,000.00**	**3,483,414.00**	**65.70**	**6.57**

3 heater each 2.5 Mmbtu/hr = 7.5 MMBtu/hr
7.5 MMBtu/hr * MMCF/1,000 MMBtu = 0.0075 MMCF/hr

Calculation Method:
Emissions (tons/yr) = Potential Emissions (kg/yr) x Conversion from kg to lbs (2.2046) x Conversion from lbs to tons (2000)

Emissions	Usage (MMcf/hr) [3]	Hours per Year	Usage (MMcf/yr)	Usage (cf/yr)	Pollutant (tons/yr) CO_2	CH_4	N_2O
Potentials To Emit - tons/year							
Natural Gas Sources - Proposed Changes to TwoTone and Bumper Systems							
Natural Gas Combustion - Heated Flash[2]	0.0075	8760	65.70	65,700,000.00	3,839.77	0.07	0.01
GRAND TOTAL (tons/year)	**0.0075**	**--**	**65.70**	**65,700,000.00**	**3,839.77**	**0.07**	**0.01**

Calculation Method:
CO2e Emissions (tons/yr) = Pot'l Emissions (tons/yr) of each GHG x Global Warming Potential

Emissions	Usage (MMcf/hr) [3]	Hours per Year	Usage (MMcf/yr)	Usage (cf/yr)	Pollutant (CO2e tons/yr) CO_2	CH_4	N_2O	Total
Potentials To Emit - CO2e tons/year								
Natural Gas Sources - Proposed Changes to TwoTone and Bumper Systems								
Natural Gas Combustion - Heated Flash[2]	0.0075	8760	65.70	65,700,000.00	3,839.77	1.52	2.25	3,843.53
GRAND TOTAL (CO2e tons/year)	**0.0075**	**--**	**65.70**	**65,700,000.00**	**3,839.77**	**1.52**	**2.25**	**3,843.53**

Note:
[1] Emission Factors & High Heat Values from 40 CFR 98, Table C-1 and Table C-2 Subpart C; and Global Warming Potentials from 40 CFR 98, Table A-1.
[2] There will be three new heated flash burners, each rated at 2.5 MMBtu/hr (One for modified two-tone and two for modified bumper system).
[3] Usage based on conversion factor of 1 MMCF/1,000 MMBtu.

Appendix B

CONTROL TECHNOLOGY / PSD BACT ANALYSIS

Source Name:	Subaru of Indiana Automotive, Inc.
Source Location:	5500 State Road 38 East, Lafayette, Indiana 47903
County:	Tippecanoe
SIC Code:	3711
Operation Permit No.:	T 157-5906-00050
Operation Permit Issuance Date:	June 28, 2004
PSD/Significant Source Modification No.:	157-29566-00050
Part 70 Operating Permit Renewal No.:	157-29567-00050
Permit Reviewer:	Aida De Guzman

Subaru of Indiana Automotive, Inc. (SIA) submitted a permit application on August 16, 2010 relating to increasing vehicle production of the plant from 262,000 vehicles per year to 310,000 vehicles per year. The following changes to the plant will be made to allow for this increase:

(a) Stamping Shop – involves the stamping of sheet metal using equipment capable of forming various components of a vehicle body (doors, roofs, fenders, hoods). The building will be extended to accommodate the increase in production. This operation is listed as an insignificant activity. The proposed project will not change its insignificant classification.

(b) Body Shop – The body shop utilizes a variety of resistance welding and other equipment to merge the vehicle body components from the stamping shop to form the metal shell of the vehicle body. SIA is proposing to add storage capacity to the body shop in order to accommodate the increase in vehicle production**.** No physical modification to the existing equipment at the shop will be made. The proposed project will not change its insignificant classification.

(c) Paint Shop –

(1) Electrodeposition Coating of Vehicle Bodies (ED Coating Line), identified as Unit 001 – Current system is using waterborne technology with the oven controlled by a Catalytic Incinerator. A physical change is being made to the Oven Staging/Cool Down Area. Vehicles that come out of the oven typically enter this staging area where they continue to cool prior to moving on to the sealer deck. The number of vehicles in this staging area is the basis for what can be processed through the primary paint system. Currently, the staging area is not sufficient to hold enough vehicles to support the proposed increase in production volumes.

No physical changes will occur to the ED Coating Line's Dip/Rinse Tanks and Curing Oven.

(2) The Twotone and Repair Booth (part of the Topcoat Body Paint System) will be physically changed by replacing the existing manual application system to allow for the application of waterborne basecoat and solventborne clearcoat materials. After the change, the Twotone Coating Line will be referred to as Topcoat #3.

The Plastic Bumper Line (Unit 005) is being converted from a solventborne system to a waterborne system (primer and basecoat only, clearcoat will remain a solventborne material). Within the primer and basecoat system, a heated flash zone will be installed (new burners at 2.5 MMBtu/hr each). No other changes are being made to the Plastic Bumper System. The changes being proposed will result in a decrease in VOC emissions, thus not triggering a BACT evaluation.

(3) Three (3) new natural gas-fired heaters for the Heated Flash Zone Systems each with a maximum heat input capacity of 2.5 MMBtu/hr are being proposed to provide additional

paint curing for the waterborne materials utilized in the Twotone and Plastic Bumper Systems.

(4) No physical changes will be made to the following operations although they will experience an increase in utilization as a result of the project: Sealing and PVC Undercoating Line, Intermediate (Surfacer) Coating Line, Blackout and Wax Operation, and the Plastic Fascia Coating Line.

(5) Trim Line, identified as Unit 010 – There will be an increase in the conveyor's line speed to allow for an increase in the number of assembled units.

(d) Engine Assembly Facility – Changes to the buffer, storage and line speed will occur.

(e) Miscellaneous Support Functions – Various support functions, such as the paint mixing rooms, bulk storage tanks (i.e., gasoline tank, purge thinner tank and waste purge thinner tank), Purge Solvent Recovery Systems (excluding Plastic Bumper Paint Line System and Twotone Systems, where changes will be made to utilize waterborne materials in these two paint line systems) will not be physically changed to accommodate the increase in capacity. These support functions will however experience an increase in utilization.

This modification emits a total VOC of 534.8 tons per year based upon a Baseline Actual to PTE (ATP) test. The VOC increase is greater than the PSD significant level of 40 tons per year. Therefore, this modification is subject to 326 IAC 2-2, PSD. A PSD BACT analysis is required under 326 IAC 2-2-3(3) (PSD Rule: Control Technology Review Requirements) for VOC only and for emission units that were physically modified for which net emission increases would occur. Note: 351.3 tons per year is emitted from emission units that are subject to 326 IAC 2-2-3(3), PSD BACT.

The BACT analysis submitted by Subaru of Indiana Automotive, Inc., and reviewed by IDEM, OAQ was based upon the draft "Top-Down approach: BACT Guidance" published by USEPA, Office of Air Quality Planning Standards, March 15, 1990. The BACT analysis was based upon the following sources of information which were reviewed or contacted:

(1) RACT/BACT/LAER Information System; USEPA, BACT/LAER Clearinghouse;
(2) Compilation of Control Technology; USEPA, BACT/LAER Clearinghouse
(3) EPA, State, and Local Air Quality permits and applications where related;
(4) Control equipment and material vendors; and,
(5) OAQPS Control Cost Manual.

The BACT analysis evaluated the following existing operations that will undergo a physical change at which net emission increases would occur and new emission units associated with the project that emit VOC. Note: Operations that result in emission increases only because of increased utilization are not subject to PSD BACT evaluation:

EMISSIONS SOURCE	DESCRIPTION
Unit 001-Electrodeposition Coating of Vehicle Bodies (ED Coating System)	The current system is using waterborne technology with the curing oven controlled by a catalytic incinerator. A physical change is being made to the oven staging/cool down area. Vehicles that come out of the curing oven typically enter this staging area where they continue to cool prior to moving on to the sealer deck. The number of vehicles in this staging area is the basis for what can be processed through the primary paint system. Currently, the staging area is not large enough to hold enough vehicles to support the proposed increase in production volumes. No physical changes will occur to the ED system's Dip/Rinse Tanks or curing oven.

EMISSIONS SOURCE	DESCRIPTION
Unit 002 – Sealing and PVC Undercoating Line	The PVC Booth added in 1999 did not go through PSD review; instead it went through netting to avoid PSD. The source is proposing to relax the limits in that 1999 permit. Therefore, it is now subject to PSD under this permitting action.
Unit 003 - Twotone Booth only	The coating application system will be changed to allow for the application of waterborne basecoat and clearcoat materials.
Unit 010 - Trim Line	Application of weld sealer and adhesive. Changes will be made to the existing conveyor system to increase the line speed allowing for the production of 310,000 vehicles per year.
New Natural Gas Combustion Equipment	New natural gas-fired heaters will be installed for heated flash zones for waterborne coating materials to be used in the modified Twotone Line and Plastic Bumper System.*

*Note: No BACT analysis was made for the Plastic Bumper System because its modification did not result in an emissions increase.

UNCONTROLLED PTE SUBJECT TO BACT		
EMISSION SOURCE	SYSTEM COMPONENTS	UNCONTROLLED PTE TONS/YEAR
Unit 001- ED Coating System	Dip / Rinse Tanks	7.0
	Tanks / Oven (assumes 70% carryover)	23.4
Unit 002 - Sealing and PVC Undercoating Line (Does not include recent change to incorporate LASD (liquid sound deadener) application process which is not part of the 1999 project)	Fugitives (i.e., sealer deck), PVC Booths and Curing Oven	62.0 *(36.7 is available for control)
Unit 003 – Topcoat Line 3 Coating System – Modified Twotone System within the Topcoat System	Basecoat Operation Basecoat and Oven	14.6 30.7
	Clearcoat Operation Cleacoat and Oven	49.9 66.0
	Basecoat, Clearcoat and Oven (assumes 20% carryover)	80.6
Unit 010 – Trim Line	Fugitive Emissions	17.1
	TOTAL	351.3

*Based upon retention testing the VOC potential that could be released from the Sealer and PVC system is 36.7 tons/year, or 59% of all VOC entering the Sealer and PVC system. The test showed that not all of the VOC from the materials would actually be released from the sealer deck, PVC booth or PVC curing oven. Some of the VOC emissions are released (or carried over) along the paint line system, trim line and once the vehicles exit the line for external shipment.

BACT Definition and Applicability

Federal guidance on BACT requires an evaluation that follows a “top down” process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by the regulation or the permit, or the controls achieved in practice. The highest level of the control is then evaluated for technical feasibility.

The five basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies, innovative technologies and controls applied to similar source categories.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based upon physical, chemical, engineering and source-specific factors related to safe and successful use of the controls.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based upon adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

BACT For Volatile Organic Compound (VOC)

This BACT analysis applies to each individual new and modified affected emission units at which a net emissions increase would occur (i.e., ED Coat System, identified as Unit 001; Twotone and Repair Booth, part of the Topcoat Body Paint System; Trim Line, identified as Unit 010; three (3) new natural gas-fired Flash Zone Heaters; and Sealing and PVC Undercoating systems.

Note: Although no physical modification will be made to the Sealing and Undercoating Line it will be subject to PSD in this permitting action and a BACT will be evaluated for this system because the Permittee requested a relaxation of the limitations required for the PVC booth added in 1999.

ED COAT SYSTEM VOC BACT Analysis

STEPS 1 AND 2 – IDENTIFICATION/ELIMINATION CONTROL TECHNOLOGIES OF VOC

(a) **Condensation System** – These systems utilize a refrigerant to cool the exhaust stream, effect a phase change from gas to liquid for a target volatile constituent with ascertainable phase-change conditions, collect the liquid, and thereby lower the concentration in the gas phase. However, this technology is only effective under high concentration gradients in excess of 100 ppmv and low volumes of exhaust air (i.e., typically several hundred cubic feet per minute). The exhaust streams associated with the SIA operations are very dilute consisting of many constituents and are several thousand cubic feet per minute which would preclude any effective technical applicability of a condensation system.

In conclusion, condensation technology is not considered technically feasible to reduce VOC emissions associated with the ED system. Air flow from this system would be well outside the flow range associated with condensation units. Condensation systems are therefore eliminated from further consideration in this BACT analysis because of technical infeasibility.

(b) **Carbon Adsorption** – Activated carbon beds have a track record of successful application for adsorbing specific VOC emissions. However, the application of the technology is subject to certain limitations which can negate its applicability for specific organic streams. Whenever an exhaust stream contains other contaminants such as particulates and moisture, the technology loses its efficiency. The presence of moisture and particulates in the stream will require significant gas pre-conditioning since these interferences are deleterious to the efficiency of the carbon bed. In effect, they induce a masking phenomenon reducing the available adsorption surface area.

In addition, very dilute exhaust streams would significantly impair the effective technical applicability of a carbon adsorption system which starts to collapse at inlet VOC concentrations less than approximately 50 ppmv. In addition, the exhaust from the various operations would contain a highly variable complex of volatile compounds which would limit the effectiveness of carbon adsorption due to the interaction between chemical components, preferential adsorption and premature breakthrough. The desorption cycle would involve reentrainment of the VOCs unless they were further controlled by some form of an oxidization scheme.
In conclusion, carbon adsorption technology by itself is not considered technically feasible to reduce VOC emissions from the sources associated with the ED Coating System for the reasons noted above. Carbon adsorption by itself is therefore eliminated from further consideration due to technical infeasibility in this BACT analysis.

(c) **Polyad™ System** – This is an innovative system offered by a microwave technology vendor combining resin fluidized bed adsorption with microwave dynamic bed desorption that claims VOC control primarily for stripping VOCs from SVE (soil vapor extraction) units, air stripping at remediation sites, and solvent recovery. In addition to the fact that the technology does not have a track record for vehicle painting operations, there are other significant reservations regarding its technical applicability. Any adsorption system would suffer from similar limitations as those summarized below:

(1) Impaired efficiency due to dilute inlet stream concentrations as discussed earlier;
(2) Effect of interferences such as particulates, moisture and the presence of certain constituents which are particularly deleterious as discussed earlier;
(3) Reentrainment of VOCs during microwave desorption; and

(4) Microwave desorption technology is not a proven technology for application in the surface coating industry.

In conclusion, the Polyad™ adsorption/microwave desorption technology is not considered technically feasible to reduce VOC emissions from the ED Coating System, and will be eliminated from further consideration in this BACT analysis.

(d) **Flares** –Examples of flares: Open Flares and Enclosed Flares. A VOC combustion control process, in which the VOCs are piped to a remote, usually elevated location where it is burned either in an Open Flare or Enclosed Flare using a specially designed burner tip, auxiliary fuel, and air to promote mixing for destruction. Completeness of combustion in a flare is governed by flame temperature, residence time in the combustion zone, turbulent mixing of the gas stream components to complete the oxidation reaction, and available oxygen for free radical formation. Combustion is complete if all VOC emissions are converted to carbon dioxide and water. Incomplete combustion results in some of the VOCs being unaltered or converted to other organic compounds such as aldehydes or acids. This technology has been determined to be inappropriate for the type of emission sources associated with the ED Coating System due to the dilute exhaust stream and high volumes of exhaust gas air.

In conclusion, a flare is not considered to be technically feasible to reduce VOC emissions from the ED Coating System and will be eliminated from further consideration in this BACT analysis.

(e) **Biofiltration –** This is an air pollution control technology in which off-gases containing biodegradable organic compounds are vented, under controlled temperature and humidity, through a biologically active material. The microorganisms contained in the bed of compost-like material digest or biodegrade the organic to CO_2 and water. This technology has been largely utilized for control of odorous emissions. The process of biofiltration utilizes a biofilm containing a population of microorganisms immobilized on a porous substrate such as peat, soil, sand, wood, compost, or numerous synthetic media. As an air stream passes through the biolfilter, the contaminants in the air stream partition from the air phases to the liquid phase of the biofilm. Once the contaminants pass into the liquid phase, they become bioavailable for complex oxidative processes by the microorganisms inhabiting the biofilm.

The bioscrubber is an enhancement of the biotrickling filter whereby a packed tower is flooded with a liquid-phase and the discharge effluent is retained in a sump for added time to improve the microbe contact time. The advantages of a bioscrubber are as follows - no gas conditioning or humidification required, smaller footprint than other reactors, process suitable for neutralizing acids formed in-situ during treatment, and lesser interference from particulates. The disadvantages of a biofiltration system include complex feeding and neutralizing systems and the handling of toxic chemicals to control biomass growth.

Most bioreactors have large footprints, are maintenance intensive, operate in narrow bands of temperature and pressure requiring expensive gas conditioning, and have primarily been used for odor control in clearly speciated air streams. Because of the size of a biofiltration system, existing space at the plant would not be available to support this type of system.

In conclusion, due to the above operational limitations, the technology is not considered technically feasible to reduce VOC emissions from the ED Coating System, and will be eliminated from further consideration in this BACT analysis due to technical reasons.

(f) **Membrane Separation Technology** – This organic vapor/air separation technology involves the preferential transport of organic vapors through a non-porous gas separation membrane via a diffusion process analogous to pumping saline water through a reverse osmosis membrane. In this system, the feed stream is compressed to approximately 150 psig and sent to a condenser where the liquid solvent is recovered. The condenser bleed stream is sent to the membrane module comprised of spirally-wound modules of thin film membranes separated by plastic mesh spacers. The concentrated stream from the membrane module is returned to the compressor for further recovery in the condenser. There is no known application of membrane separation technology for coating systems.

In conclusion, since there is no known application of this technology for coating systems, this technology is not considered technically feasible to reduce VOC emissions from the ED Coating System and will be eliminated from further consideration in this BACT analysis.

(g) **Ultraviolet (UV) Oxidation** – UV light oxidation (or photolytic destruction) of vapor-phase contaminants is accomplished by passing the off-gas in close proximity to a powerful UV light source. Oxidation occurs as a result of reactions with hydroxyl radicals produced by the UV light. The photo-oxidation usually is supplemented by a gaseous chemical oxidant (e.g., ozone) or a solid catalyst (e.g., TiO_2). The process is best used to treat easily oxidized organic compounds, such as those with double bonds (e.g., trichloroethylene, perchloroethylene and vinyl chloride) as well as simple aromatic compounds (e.g., toluene, benzene, xylene, and phenol).

Initially, this technology emerged as a biocidal technology for water treatment since bacteria are inactivated at a wavelength of 254 nanometers. Additionally, it was recognized that the technology was also useful in cleaving and ionizing certain organics so that they are easily removed by deionization and organic scavenging cartridges in a polishing loop. This technology has been proposed for offgas treatment from SVE and other groundwater remediation units by the DOE. Based upon a review of the previously listed resources including the RBLC database, there are no known applications of UV oxidization technology for coating systems. For this application, the technology suffers from the following effective technical applicability reservations:

(1) UV light frequency must be selected for maximum VOC removal based upon inlet stream VOC species and concentrations. Questionable effectiveness for a matrix of volatile constituents with variable photolytic destruction isotherms, interaction between chemical constituents, preferential destruction and premature breakthroughs for non-oxidizable species;

(2) Pretreatment of inlet gas required to minimize ongoing cleaning and maintenance of UV reactor and quartz sleeves;

(3) Potential fouling of solid TiO2 catalyst by particulates, moisture and long-chain organics;

(4) Prohibitive energy requirements to power the UV reactor in excess of competing technologies; and

(5) Extensive maintenance and calibration requirements.

In conclusion, due to the above technical applicability reservations, this technology is not considered technically feasible to reduce VOC emissions from the ED Coating System and will be eliminated from further consideration in this BACT analysis.

(h) **Non-Thermal Plasma (NTP) Technology** – NTP technology was developed by the Los Alamos National Lab for the DOD and DOE as part of a new generation of VOC control options. The intent of the research was to develop a low-cost solution with reduced energy and power requirements for controlling a host of air contaminants including VOCs. An NTP is an electrically neutral form of gas containing substantial concentrations of electrons, ions and other highly reactive free radicals which may be generated in the gas stream by application of electrical energy. In theory, the sequential chemical reactions result in the destruction of the air contaminants. Other research organizations such as Batelle have developed NTP variants such as the Gas Phase Corona Reactor (GPCR) which creates non-thermal plasma in a reactor filled with dielectic packing which significantly improves reactor performance.

This control technology has not been adopted as a BACT level control device according to the RBLC. Therefore it will be eliminated from further consideration in this BACT analysis.

(i) **Volume/Rotary Concentrators** - This twin part system also known as the rotary concentrator serves to concentrate the VOC's in the inlet stream prior to an adsorption or oxidation scheme. The first section consists of a slowly rotating concentrator wheel that utilizes zeolites or carbon deposited on a substrate, which adsorbs the organics as they are exhausted from the original process and passed through the wheel. A sector of the concentrator wheel is partitioned off from the main section of the rotor and clean heated air is passed through this section to desorb the organics resulting in higher VOC concentration in a smaller gas flow.
Volume/rotary concentrators are usually installed upstream to an adsorption or oxidization configuration for ultimate VOC destruction. Further consideration of this technology including its economic, energy and environmental impacts are further discussed in the BACT analysis.

(j) **Catalytic Incineration –** Catalytic incinerators are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. In the presence of a catalyst this reaction will take place at lower temperatures than those required for thermal oxidation. Temperatures between 350 and 500 degrees Celsius are common. The catalysts are metal oxides or precious metals where they are supported on ceramic or metallic substrates. Catalytic incinerators can achieve control efficiencies of 95 to 99 percent.

From an operational standpoint, the lower reaction temperature means that the requirement for supplemental fuel is reduced or eliminated during normal operation. The lower operating temperatures will also decrease the formation of oxides of nitrogen.

In conclusion, the use of catalytic oxidation to control VOC emissions from the ED Coating System has been deemed to be technically feasible. Further consideration of this technology is provided in this BACT analysis. The economic, energy and environmental impacts associated with this technology are further discussed in the BACT analysis.

(k) **Thermal oxidation** – Thermal oxidizers are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. Dilute gas streams require auxiliary fuel (generally natural gas) to sustain combustion. Various incinerator designs are used by different manufacturers. The combustion chamber designs must provide high turbulence to mix the fuel and solvent laden air. The other requirement is enough residence time to ensure essentially complete combustion. Thermal oxidizers can achieve control efficiencies of 95 to 99 percent.

In conclusion, the use of thermal oxidation to control VOC emissions from the ED Coating System has been deemed to be technically feasible. Further consideration of this technology including its economic, energy and environmental impacts are further discussed in the BACT analysis.

STEP 3 and STEP 4 – RANK REMAINING CONTROL TECHNOLOGIES and EVALUATE MOST EFFECTIVE CONTROLS

As shown in Steps 1 and 2, the remaining viable control technologies for the ED Coating System are as follows:

- Catalytic Oxidation – 95% -99%
- Thermal Oxidation – 95% -99%
- Volume Rotary Concentrators/Thermal Incinerator -85%

These technologies have been shown to be effective at reducing VOC emissions from coating systems with large volumes of air and low VOC concentration levels and can be considered a feasible option for controlling VOC emissions from the ED Coating System. The ED Coating system currently employs catalytic oxidation control on the oven. Thus the following alternative control scenarios were evaluated.

EMISSION SOURCE	TOP LEVEL OF CONTROL	VOC EMISSIONS SUBJECT TO CONTROL (TPY)	VOC CONTROL EFFICIENCY (OVERALL)
ED Dip/Rinse Tanks and Oven	Thermal Oxidation/Catalytic Oxidation/Concentrator	23.4	95%*
Dip/Rinse Tanks Only	Thermal Oxidation/Catalytic Oxidation/Concentrator	7.0	28.5% **

* - the 95% was based upon 100% capture and 95% destruction efficiency of the RTO.
**- 30% which is 7 tons/yr of the ED Coating line's total VOC emissions comes from the Dip/Rinse Tanks. 28.5% was based upon a 95% destruction efficiency multiplied by the 30%.

Economic Impact of VOC Control Alternatives-
In determining the economic feasibility of VOC control alternatives, guidance provided by the USEPA was utilized. The economic feasibility of a specific control alternative is generally expressed in terms of annualized dollars per ton of VOC removed. By definition, cost effectiveness is the ratio of the total annualized cost of any control alternative to the annual quantity of pollutant the alternative removes from the process.

The total capital and annualized costs for the identified control alternatives were developed based upon vendor quotes for similar operations and the cost estimating structure and guidance provided in the USEPA reference, "OAQPS Control Cost Manual", Sixth Edition, EPA 452/B-02-001 (January, 2002), other relevant information provided by the respective equipment vendors, inputs from plant personnel and engineering judgment. The various cost factors are based upon guidance provided under OAQPS Manual Section 3 – VOC Controls.

Capital Recovery Factor was based upon the default annual interest rate of 7% mandated by the Office of Management and Budget (OMB).

Note: A minimum control efficiency of 95% was used throughout in the cost analysis because the cost effectiveness of adding a control device would be more when trying to achieve a higher control efficiency.

CASE 1 **A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM ECOAT DIP/RINSE TANKS AND OVEN AT NEW PRODUCTION CAPACITY**		
CAPITAL COSTS		
DIRECT CAPITAL COSTS (DC)		
	Gas Flow (acfm):	14,000
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing Adjusted for 2010):	$462,984
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$46,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (3% of Equipment)	$15,000
	Freight (5% of Equipment, OAQPS Manual)	$25,000

CASE 1 A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM ECOAT DIP/RINSE TANKS AND OVEN AT NEW PRODUCTION CAPACITY		
	PE Total =	$574,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$46,000
	Handling and erection (14% of PE, OAQPS Manual)	$80,000
	Electrical (4% of PE, OAQPS Manual)	$23,000
	Piping (2% of PE, OAQPS Manual)	$11,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$11,000
	Site preparation etc. (Engr. Estimate)	<u>$30,000</u>
	DI Total =	$201,000
	DC Total =	$775,000
INDIRECT CAPITAL COSTS (IC)		
	Engineering and Supervision (10% of PE, OAQPS Manual)	$57,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$29,000
	Contractor Fees (10% of PE, OAQPS Manual)	$57,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$17,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	<u>$17,000</u>
	IC Total =	$177,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$952,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$136,000
<u>**OPERATION AND MAINTENANCE (O & M)**</u>		
DIRECT ANNUAL COSTS (DA)		
	<u>Operating Labor:</u>	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	<u>Maintenance:</u>	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$528,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$26,627
	DA Total =	$578,000
INDIRECT ANNUAL COSTS (IA)		
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	<u>$38,000</u>
	IA Total =	$52,000
	O & M Total =	$630,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$766,000

CASE 1 A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM ECOAT DIP/RINSE TANKS AND OVEN AT NEW PRODUCTION CAPACITY		
	Baseline VOC Emissions from the E-Coat Dip/Rinse Tanks (tons/yr)	23.41
	Annual VOC removal assuming 95% Removal Efficiency (tons)	22.23
	Annual cost effectiveness, $/ton of VOC removed	**$34,500**

Note: Cost Factors based upon OAQPS Control Cost Manual (Ch. 3, 5th Ed., Dec 1995)
Natural Gas and Electricity Costs based upon the Energy Information Administration

CASE 1A A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM ECOAT DIP/RINSE TANKS AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS **DIRECT CAPITAL COSTS (DC)**		
	Gas Flow (acfm):	7,000
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing Adjusted for 2010):	$364,812
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$36,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (3% of Equipment)	$12,000
	Freight (5% of Equipment, OAQPS Manual)	$20,000
	PE Total =	$458,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$37,000
	Handling and erection (14% of PE, OAQPS Manual)	$64,000
	Electrical (4% of PE, OAQPS Manual)	$18,000
	Piping (2% of PE, OAQPS Manual)	$9,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$9,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$167,000
	DC Total =	$625,000
INDIRECT CAPITAL COSTS (IC)		
	Engineering and Supervision (10% of PE, OAQPS Manual)	$46,000

CASE 1A **A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM ECOAT DIP/RINSE TANKS AT NEW PRODUCTION CAPACITY**		
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$23,000
	Contractor Fees (10% of PE, OAQPS Manual)	$46,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$14,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	<u>$14,000</u>
	IC Total =	$143,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$768,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$109,000
<u>OPERATION AND MAINTENANCE (O & M)</u>		
DIRECT ANNUAL COSTS (DA)		
	<u>Operating Labor:</u>	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	<u>Maintenance:</u>	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$264,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$13,313
	DA Total =	$300,000
INDIRECT ANNUAL COSTS (IA)		
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	<u>$31,000</u>
	IA Total =	$45,000
	O & M Total =	$345,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$454,000
	Baseline VOC Emissions from the E-Coat Dip/Rinse Tanks (tons/yr)	7.02
	Annual VOC removal assuming 95% Removal Efficiency (tons)	6.67
	Annual cost effectiveness, $/ton of VOC removed	**$68,100**

CASE 1B A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM ED DIP/RINSE TANKS AND OVEN AT NEW PRODUCTION CAPACITY			
CAPITAL COSTS			
	DIRECT CAPITAL COSTS (DC)		
	Gas Flow:	14,000	scfm
	Purchased Equipment Costs (PE)		
	Catalytic Incineration System (OAQPS Budgetary Pricing Adjusted for 2010):	$341,784	
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		
	Instrumentation (10% of Equipment, OAQPS Manual)	$34,000	
	Access Way Addition (Engr. Estimate)	$25,000	
	Sales Tax (7% of Equipment in Indiana)	$26,000	
	Freight (5% of Equipment, OAQPS Manual)	$19,000	
	PE Total =	$446,000	
	Direct Installation Costs (DI)		
	Foundations and supports (8% of PE, OAQPS Manual)	$36,000	
	Handling and erection (14% of PE, OAQPS Manual)	$62,000	
	Electrical (4% of PE, OAQPS Manual)	$18,000	
	Piping (2% of PE, OAQPS Manual)	$9,000	
	Insulation + Painting (2% of PE, OAQPS Manual)	$9,000	
	Site preparation etc. (Engr. Estimate)	$30,000	
	DI Total =	$164,000	
	DC Total =	$610,000	
	INDIRECT CAPITAL COSTS (IC)		
	Engineering and Supervision (10% of PE, OAQPS Manual)	$45,000	
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$22,000	
	Contractor Fees (10% of PE, OAQPS Manual)	$45,000	
	Start-up + Performance (3% of PE, OAQPS Manual)	$13,000	
	Over-all Contingencies (3% of PE, OAQPS Manual)	$13,000	
	IC Total =	$138,000	
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$748,000	
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$107,000	

CASE 1B A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM ED DIP/RINSE TANKS AND OVEN AT NEW PRODUCTION CAPACITY		
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) - (0.001 ft^3 per acfm)	$9,100
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$127,000
	Electricity (0.0044 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$32,000
	DA Total =	$191,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$30,000
	IA Total =	$44,000
	O & M Total =	$235,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$342,000
	Baseline VOC Emissions from the ED Dip/Rinse Tanks and Oven (tons/yr)	23.41
	Annual VOC removal assuming 95% Removal Efficiency (tons)	22.23
	Annual cost effectiveness, $/ton of VOC removed	**$15,400**

CASE 1C
A NEW CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM ED DIP/RINSE TANKS AT NEW PRODUCTION CAPACITY

CAPITAL COSTS			
	DIRECT CAPITAL COSTS (DC)		
	Gas Flow:	7,000	scfm
	Purchased Equipment Costs (PE)		
	Catalytic Incineration System (OAQPS Budgetary Pricing Adjusted for 2010):	$233,916	
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.		
	Instrumentation (10% of Equipment, OAQPS Manual)	$23,000	
	Access Way Addition (Engr. Estimate)	$25,000	
	Sales Tax (7% of Equipment in Indiana)	$18,000	
	Freight (5% of Equipment, OAQPS Manual)	$13,000	
	PE Total =	$313,000	
	Direct Installation Costs (DI)		
	Foundations and supports (8% of PE, OAQPS Manual)	$25,000	
	Handling and erection (14% of PE, OAQPS Manual)	$44,000	
	Electrical (4% of PE, OAQPS Manual)	$13,000	
	Piping (2% of PE, OAQPS Manual)	$6,000	
	Insulation + Painting (2% of PE, OAQPS Manual)	$6,000	
	Site preparation etc. (Engr. Estimate)	$30,000	
	DI Total =	$124,000	
	DC Total =	$437,000	
	INDIRECT CAPITAL COSTS (IC)		
	Engineering and Supervision (10% of PE, OAQPS Manual)	$31,000	
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$16,000	
	Contractor Fees (10% of PE, OAQPS Manual)	$31,000	
	Start-up + Performance (3% of PE, OAQPS Manual)	$9,000	
	Over-all Contingencies (3% of PE, OAQPS Manual)	$9,000	
	IC Total =	$96,000	
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$533,000	
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$76,000	

CASE 1C A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM ED DIP/RINSE TANKS AT NEW PRODUCTION CAPACITY		
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) - (0.001 ft^3 per acfm)	$4,550
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$63,000
	Electricity (0.0044 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$16,000
	DA Total =	$107,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$21,000
	IA Total =	$35,000
	O & M Total =	$142,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$218,000
	Baseline VOC Emissions from the ED Dip/Rinse Tanks and Oven (tons/yr)	7.02
	Annual VOC removal assuming 95% Removal Efficiency (tons)	6.67
	Annual cost effectiveness, $/ton of VOC removed	**$32,700**

As shown above, the cost effectiveness of using Catalytic Incineration System or Regenerative Thermal Oxidizer (RTO) for controlling VOC emissions from the ED Dip/Rinse Tanks and Oven combined and solely the ED Dip/Rinse Tanks ranges from $15,400 to $68,100, which is considered cost excessive. The ED oven emissions are currently controlled with a Catalytic Incinerator. Additional control has been determined to not represent BACT based upon economic impact.

RETROFITTING EXISTING ED COATING SYSTEM –UNIT 001 CATALYTIC INCINERATOR

The ED coating system consists of pretreatment operations, followed by the ED body coating/rinse tanks and the ED curing oven. Pursuant to the original PSD permit for the SIA plant, BACT for the ED coating system has been established as the control of VOC emissions from the ED Curing Oven only, using a Catalytic Incinerator. This incinerator is tested every 2.5 years to determine its VOC destruction efficiency.

The design parameters for the existing Catalytic Incinerator for the ED Curing Oven are as follows:

Parameter	ED Curing Oven Incinerator
Air Flow	Design Maximum: 7,500 scfm Actual Flow; 5,639 scfm Remaining Capacity: 1,861 scfm
VOC Loading	Design Maximum: 50 lb/hr Current Loading: 16.7 lb/hr Remaining Capacity: 33.3 lb/hr

As shown above, the Catalytic Incinerator has a design flow rate of 7,500 standard cubic feet per minute (scfm) and the actual volume of air being sent to this incinerator from the ED Coating Oven for control is approximately 5,639 scfm. This leaves approximately 1,861 scfm of flow available for abatement. If additional VOC emissions from the coating operations in the ED Coating Line are to be controlled in the existing Catalytic Incinerator, the incinerator will have to possess sufficient capacity to handle the additional air flow from the ED dip tank, which is 7,000 scfm based upon 100% capture.

SIA engineering has evaluated the ED coating system and has concluded that the only other source of emissions associated with this system is from the coating and rinse tanks. However, the estimated air flow from these tanks is 7,000 scfm. Thus, the current capacity of the incinerator will not allow for the inclusion of this additional exhaust gas volume.

Discussion with CPI (incinerator vendor) indicates that SIA cannot modify the existing control equipment to handle additional air flow volume or pollutant loading beyond current design values. If additional air flow or pollutant loading beyond design values is required, new, higher capacity equipment is the only solution. Thus, retrofitting the existing VOC incinerator with additional air flow capacity to address air flows from the ED tanks is not feasible.

Another potential retrofit option - is the inclusion of a Carbon Concentrator to concentrate the VOCs from the ED Tanks and then direct the smaller exhaust gas stream of concentrated VOC emissions to the existing Catalytic Incinerator. The Carbon Concentrator could concentrate the air stream at a 10 to 1 ratio then send the concentrated VOC stream to the existing Catalytic Incinerator (i.e., approximately 700 scfm) which would fit into the remaining capacity of the existing incinerator. However, the following issues have been considered that do not support technical feasibility of actual installation and operation of a Carbon Concentrator at the ED Coating System:

(a) No existing ED coating system in operation today is equipped with a Carbon Concentrator system. These systems are typically installed with larger volumes of air where VOC can be concentrated at a cost effective level;

(b) The ED Dip/Rinse Tanks exhaust gas stream may have significant levels of moisture, which will adversely affect operation of the Carbon Concentrator system, thus reducing its overall efficiency;

(c) The potential emissions of VOC from the ED Dip/Rinse Tanks is approximately 7.0 tons/year which is extremely small for control system to be cost effective;

(d) The VOC concentration from the ED Dip/Rinse Tanks' air flow is low, since the primary VOCs from this type of system tend to stay in the coating material and typically are not released until the coating material is cured through heating. Dilute exhaust streams significantly impair the effective technical applicability of a carbon adsorption system.

EPA guidance for air pollution control equipment states that any process that generates VOC emissions at low concentrations (as low as 20 ppm) at relative high air flows (greater than 5,000 scfm) should consider adsorption technology to concentrate VOC in the emission stream prior to final treatment and either recycling or destruction. The VOC gas stream for the ED Dip/Rinse Tanks meets the air flow requirement, however the VOC concentration in that air stream is well below 20 ppm, thus this air stream is not technically feasible for VOC concentration through adsorption technology (i.e., Carbon Concentrator); and

(e) Installation of this type of system would require space within the paint shop building which is not currently available for supporting this type of equipment. In addition, ducting work would have to fabricated and installed, which would involve additional cost and space.

Conclusion: Based upon the reasons stated above, retrofitting of the existing ED Coating Oven Catalytic Incinerator to handle additional flow from the ED Dip/Rinse Tanks exhaust is not technically feasible due to its low VOC concentration.

Energy Impact of VOC Control Alternatives

Incorporation of an RTO or Catalytic Incineration systems to control the VOC emissions from the ED Dip/Rinse Tanks will require the increased usage of natural gas, as well as electricity.

Environmental Impact of VOC Control Alternatives

Incorporation of an RTO or Catalytic Incineration systems to control VOC emissions from the ED Dip/Rinse Tanks will require the increased usage of natural gas, which will result in combustion related air pollutant emissions from the plant. Likewise, the increased usage of natural gas to support an RTO or Catalytic Incineration systems would result in additional emissions of greenhouse gas emissions (GHG), which is regulated under EPA's Tailoring rule and Mandatory Greenhouse Gas Reporting rule. Incorporation of the catalytic oxidation system to further control the VOC emissions from the ED Dip/Rinse tanks will require the periodic replacement and disposal of the spent catalyst which represents an additional environmental impact.

STEP 5 – SELECT BACT

The following Table presents a summary of recent BACT determinations for ED Coating operations obtained from USEPA's RACT/BACT/LAER Clearinghouse (RBLC):

ED-Coating Line				
Date of Permit	**Facility**	**Location**	**Description**	**VOC BACT**
Proposed	Subaru of Indiana Automotive, Inc.	Lafayette, IN	Automobile and light duty truck assembly plant	**Proposed BACT:** ED Coat Line (Dip Tank/Rinse, curing oven) = 0.4 lb/gacs, on a daily basis. ED Body Oven – Incinerator with 90%, continued capture efficiency of 70%
7/30/87				**Current BACT:** ED Coat Line (Dip Tank/Rinse, curing oven) = 0.52 lb/gacs, on a daily basis. ED Body Oven – Incinerator with 90% destruction efficiency, capture efficiency of 70%

ED-Coating Line				
Date of Permit	**Facility**	**Location**	**Description**	**VOC BACT**
4/2/01	Nissan North America, Inc.	Canton, MS	Auto and Light Duty Truck Mfg - Systems 1 and 2	Use of waterborne coating with the oven exhaust routed thru RTO with destruction efficiency 95% **NSPS:** VOC - 1.34 lbs VOC/gacs, **BACT** - 0.13 lb VOC/gacs
10/1/02	Honda Manufacturing of Alabama, LLC	Lincoln, AL	Motor Vehicle Assembly Plant	ELPO Coating Line: Waterbased coatings. Dip tank applicator. 0.13 lbs VOC /gal ACS. 1.25 lb VOC/gal max. ELPO Oven - Incinerator with 95% destruction efficiency with natural gas only for fuel.
5/7/2002	Lansing Craft Centre - GM Corp	Lansing, MI	Automobile and light duty truck assembly plant	**BACT:** 0.04 lbs/gas. Use of formaldehyde and lead free waterborne coatings. VOC emissions from dip tank and one oven controlled by RTO #1. VOC emission from second over controlled by RTO #2.
8/29/2002	General Motors Corporation - Delta Township, Michigan	Delta Township, MI (I-69 and Davis Rd.	Motor Vehicle Assembly Plant	Use of waterborne coating with the oven exhaust routed thru RTO with a minimum destruction efficiency of 95%. **HAPS:** 0.02 lbs HAPS/gacs, 15.2 tons/yr. **BACT -** 0.04 lbs VOC/gacs
4/1/2002	BMW Manufacturing Corporation	Spartanburg, SC	Motor Vehicle Assembly Plant	**NSPS:** 1.42 lbs/gallon ACS, HAPS: 1.605 lb/gallon ACS, natural gas combustion for combustion sources
10/18/2002	Honda Manufacturing of Alabama LLC	Talladega County, Alabama	Motor Vehicle Assembly Plant	**BACT:** 0.13 lbs/gacs. Oven oxidation = 95% destruction/removal efficiency
Oct-02	Hyundai Motor Manufacturing Alabama	Montgomery, Alabama	Motor Vehicle Assembly Plant	**BACT:** Water based coatings, dip tank applicator, 0.13 lb/gal acs, Paste: 1.73 lb/gal, Resin: 0.04 lb/gal, E-Coat Oven BACT: natural gas only for incinerator
Jun-04	Toyota Motor Manufacturing Texas	San Antonio, Texas	Motor Vehicle Assembly Plant	**BACT:** 0.13 lbs/gacs. Oven oxidation = 95% destruction/removal efficiency
9/2/2004	Daimler Chrysler	Lucas County, Ohio	Motor Vehicle Assembly Plant	**BACT:** 0.04 lbs/gacs. Use of thermal incinerator
10/19/2006	Honda Manufacturing	Greensburg, Indiana	Motor Vehicle Assembly Plant	**BACT:** 0.04 lbs/gacs, based upon a daily volume weighted average. E-Coat tank, rinse stage and oven controlled by RTO with 95% destruction/removal efficiency (DRE) and 100% capture efficiency.
7/27/2007	KIA Motors Manufacturing Georgia	West Point, Georgia	Motor Vehicle Assembly Plant	**BACT:** 0.1900 lb/gal monthly - applied solid. Oven controlled by RTO with 95% destruction/removal efficiency.
5/3/2007	Daimler Chrysler Corporation - Toledo Supplier Park (Paint Shop)	Toledo, Ohio	Motor Vehicle Assembly Plant	**BACT:** 0.0400 lb/gal coating solid as a vol. wt. average on a monthly basis. Vented to thermal oxidizer, natural gas-fired oven with 100% capture and 95% control efficiencies.
6/5/2007	Toyota Motor Manufacturing Mississippi, Inc.	Blue Springs, Mississippi	Motor Vehicle Assembly Plant	**BACT:** 0.13 lbs/ GACS and use of waterborne materials. Oven controlled by TO with 95% destruction/removal efficiency.

ED-Coating Line				
Date of Permit	**Facility**	**Location**	**Description**	**VOC BACT**
--	Toyota Motor Manufacturing	Princeton, Indiana	Motor Vehicle Assembly Plant	**BACT: 2.6** lbs VOC/ GACS, less water for combined ED system and primer surfacer system, based upon a daily volume weighted average

The RBLC entrees shown in the above table have a wide range of BACT VOC limits from 0.04 lb/ gallon of applied coating solids (lb/gacs) to 0.19 lb/gacs and the used of incinerator with the most stringent at 95% overall control efficiency. Only Honda Manufacturing of Indiana has a totally enclosed ED Coating Line, which is the reason why it can control the VOC emissions from the entire ED Coating Line (ED Dip/Rinse Tanks and ED Curing Oven) and achieved the most stringent VOCT BACT limit of 0.04 lb/gacs, with RTO at 95% destruction efficiency and capture efficiency of 100%. GM Lansing Craft Centre has a BACT limit of 0.04 lb/gacs from the Dip Tank and one Curing Oven controlled by one RTO and another Curing Oven controlled by another RTO. The rest of the companies in the above table only control the VOC emissions from the ED Curing Oven.

Subaru's current BACT limit was established in PSD (79) 1651, issued on July 30, 1987, revised on July 26, 1989, with the ED Coat Tank/Line VOC BACT limit at 0.52 lb/gacs, and the ED Curing Oven controlled by a catalytic oxidizer with 90% destruction efficiency and 70% capture efficiency.

The existing ED Coating system at the SIA plant uses dip tank waterborne technology coating with the ED Curing Oven controlled by a Catalytic Incinerator while the ED Dip/Rinse Tanks are uncontrolled. Material change is not an option to meet the most stringent BACT limit of 0.04 lb/gacs because it will compromise the quality standards (appearance and durability) or product specifications set for the vehicles. In addition materials research and substitution takes years to complete. In addition, all the sources in comparison with Subaru that are presented in the above table represent new construction where design for total capture and controls can be incorporated into the plant design in a cost effective way. It is important to note that the system being employed and to be utilized as part of this expansion project is an existing operation. Additional costs and issues arise when evaluating the cost effectiveness of installing an additional VOC control technologies on the ED Coating Line. One of the major obstacles is the downtime that would be required in retrofitting the ED Dip/Rinse Tanks with a dedicated thermal or Catalytic Incinerator system to control its emissions. Since the ED Coating Line requires a clean environment, it will be shutdown for at least the two week period that the ductwork and electrical are being installed. This downtime is a potential economic burden to SIA due to the inability to produce salable vehicles during that retrofit process.

Conclusion: Since the most stringent BACT is 0.04 lb/gacs using an RTO with destruction efficiency of 95% and capture efficiency of 100%, the ED Coating System from SIA will likewise be required to meet its current destruction efficiency of 90% and capture efficiency of 70%. Therefore the PSD BACT for the ED Coating System has been determined to be the following:

(a) The VOC emissions from the ED Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent, and a minimum capture efficiency of 70% for the entire ED Coating Line (ED Dip/Rinse Tanks and Curing Oven).

(b) The daily VOC emissions from the ED Coating Line (ED Dip/Rinse Tanks and Curing Oven) shall be limited to 0.4 pound per gallon of applied coating solids (lb/gacs).

<u>Methodology:</u>
The calculated VOC emission rate expressed in lbs VOC per gallon applied coating solids (lb/gacs) is determined as follows:

VOC Content = 0.2 lbs/gallon
Solid Content by volume = 18%

Transfer Efficiency = 100%
Overall Control Efficiency = 63% (70% capture and 90% destruction)
0.2 lbs VOC /gallon divided by (0.18 * 100 %) X (1-0.63) = 0.4 lbs VOC/gacs

SEALING AND PVC UNDERCOATING LINE VOC BACT ANALYSIS

Although no physical modification will be made to the Sealing and Undercoating Line it will be subject to PSD in this permitting action and a BACT will be evaluated for this system because of the Permittee's requests to relax existing limitations required for the PVC Booth added in 1999.

STEP 1 – IDENTIFICATION OF CONTROL TECHNOLOGIES OF VOC
The following control technologies were identified and evaluated to control VOC emissions from the Sealing and Underbody Coating Operations:

(a) Material/application technique changes:
Reductions in VOC emissions can occur by process enhancement, change in the coating material being used so that VOCs emitted is reduced through the use of a less volatile solvent or is replaced with water in the material and implementation of good work practices.

(b) Add-on Control Options:
(1) Condensation System
(2) Carbon Adsorption
(3) PolyadTM System
(4) Flares
(5) Volume/Rotary Concentrators
(6) Biofiltration
(7) Membrane Separation Technology
(8) Ultraviolet (UV) Oxidation
(9) Non-Thermal Plasma (NTP) Technology
(10) Catalytic Incineration
(11) Thermal oxidation

STEP 2 – ELIMINATE TECHNICALLY INFEASIBLE CONTROL OPTIONS
(a) Material/application technique changes:

(1) Process Enhancement - SIA is currently using techniques for applying sealer/undercoating materials to plant's vehicle body that meet the material quality control specification as defined by SIA internal standards. Because of the type of part being coated, as well as the total number of parts being coated, SIA is committed to the paint system configuration as currently employed at the Lafayette plant.

(2) Implementation of Good Work Practices - SIA is engaged in the training of all personnel that work in the Sealing and Undercoating Line operation. This training provides each individual with a solid understanding of the coating operation. Thus, the individuals working on this Coating Line are trained in the implementation of good work practices. SIA is continuously exploring options that maximize the operation of the Coating Line while minimizing potential environmental impacts.

(b) Add-on Control Devices:
The following VOC control technologies were evaluated for applicability to the Sealing and Undercoating Line (sealer deck/booths and oven), Unit 002:

The test for technical feasibility of any control option is whether it is both available and applicable to reducing VOC emissions from automobile Sealing and PVC Undercoating operations. The previously listed information resources were consulted to determine the extent of applicability of each identified control alternative.

(1) **Condensation System** – This system utilizes a refrigerant to cool the exhaust stream, affect a phase change from gas to liquid for a target volatile constituent with ascertainable phase-change conditions, collect the liquid, and thereby lower the concentration in the gas phase. However, this technology is only effective under high concentration gradients in excess of 100 ppmv. The exhaust streams associated with the Sealing and Undercoating Line, Unit 002 are very dilute, consisting of many constituents, and high volumetric flow rates, which would preclude any effective technical applicability of a condensation system.

In conclusion, condensation technology is not considered technically feasible to reduce VOC emissions from the Sealing and Undercoating Lin, Unit 002. Air flow from the paint spray system and curing oven would be well outside the flow range associated with condensation units. Therefore, condensation system will be eliminated from further consideration in this BACT analysis.

(2) **Carbon Adsorption** – Activated carbon beds have a record of successful application for adsorbing specific VOC emissions. However, the application of the technology is subject to certain limitations which can negate its applicability for specific organic streams. Whenever an exhaust stream contains other contaminants such as particulates and moisture, the technology loses its efficiency. The presence of moisture and particulates in the stream will require significant gas pre-conditioning since these interferences are deleterious to the efficiency of the carbon bed. In effect, they induce masking on the carbon bed, thereby, reducing the available adsorption surface area.

In addition, very dilute exhaust streams would significantly impair the effective technical applicability of a carbon adsorption system which starts to collapse at inlet VOC concentrations less than approximately 50 ppmv. The exhaust from the various operations would contain a highly variable complex of volatile compounds which would limit the effectiveness of carbon adsorption due to the interaction between chemical components, preferential adsorption and premature breakthrough. The desorption cycle would involve reentrainment of the VOCs unless they were further controlled by some form of an oxidization scheme.

In conclusion, carbon adsorption technology by itself is not considered technically feasible to reduce VOC emissions from the Sealing and Undercoating Line, Unit 002 for the reasons noted above. Therefore, it will be eliminated from further consideration in this BACT analysis.

(3) **PolyadTM System** – This is an innovative system offered by a microwave technology vendor combining resin fluidized bed adsorption with microwave dynamic bed desorption that claims VOC control primarily for stripping VOCs from SVE (soil vapor extraction) units, air stripping at remediation sites, and solvent recovery. In addition to the fact that this technology has not been used in controlling VOCs from vehicle painting operations, any adsorption system would suffer from similar limitations as those summarized below:

(i) Impaired efficiency due to dilute inlet air stream concentrations;
(ii) Reduction in the adsorption capacity of the system due to the presence of particulates, moisture and other constitutents in the airstream;
(iii) Reentrainment of VOCs during microwave desorption; and Microwave desorption technology has not been applied in the surface coating industry.

In conclusion, the PolyadTM adsorption/microwave desorption technology is not considered technically feasible to reduce VOC emissions from the Sealing and

Undercoating Line, Unit 002 and will be eliminated from further consideration in this BACT analysis**.**

(3) **Flares** – A VOC combustion control process, in which the VOCs are piped to a remote, usually elevated location and burned in an open flame in the open air using a specially designed burner tip, auxiliary fuel, and air to promote mixing for destruction. Completeness of combustion in a flare is governed by flame temperature, residence time in the combustion zone, turbulent mixing of the gas stream components to complete the oxidation reaction, and available oxygen for free radical formation. Combustion is complete if all VOC emissions are converted to carbon dioxide and water. Incomplete combustion results in some of the VOCs being unaltered or converted to other organic compounds such as aldehydes or acids. This technology has been determined to be inappropriate for the type of emission sources associated with the Sealing and Undercoating operations due to the large volume of air flow (i.e. > 50,000 scfm).
In conclusion, a flare is not considered to be technically feasible to reduce VOC emissions from the Sealing and Undercoating Line and will be eliminated from further consideration in this BACT analysis.

(4) **Volume/Rotary Concentrators** – This twin part system also known as the rotary concentrator serves to concentrate the VOC's in the inlet stream prior to an adsorption or oxidation scheme. The first section consists of a slowly rotating concentrator wheel that utilizes zeolites or carbon deposited on a substrate, which adsorbs the organics as they are exhausted from the process and passed through the wheel. A section of the concentrator wheel is partitioned off from the main section of the rotor and clean heated air is passed through this section to desorb the organics resulting in higher VOC concentration in a smaller gas flow.

Volume/rotary concentrators are usually installed upstream to an adsorption or oxidization configuration for ultimate VOC destruction. However, since the fundamental mechanism of VOC removal from the air stream is adsorption, the limitations discussed earlier for adsorption systems are present here resulting in questionable effective technical applicability.

In conclusion, the technology is considered technically feasible with some reservations to reduce VOC emissions from the automatic spray booth zones.

(5) **Biofiltration** – This is an air pollution control technology in which off-gases containing biodegradable organic compounds are vented, under controlled temperature and humidity, through a biologically active material. The microorganisms contained in the bed of compost-like material digest or biodegrade the organic to CO_2 and water. This technology has been largely utilized for control of odorous emissions. The process of biofiltration utilizes a biofilm containing a population of microorganisms immobilized on a porous substrate such as peat, soil, sand, wood, compost, or numerous synthetic media. As an air stream passes through the biolfilter, the contaminants in the air stream partition from the air phases to the liquid phase of the biofilm. Once the contaminants pass into the liquid phase, they become bioavailable for complex oxidative processes by the microorganisms inhabiting the biofilm.

The bioscrubber is an enhancement of the biotrickling filter whereby a packed tower is flooded with a liquid-phase and the discharge effluent is retained in a sump for added time to improve the microbe contact time. The advantages of a bioscrubber are as follows - no gas conditioning or humidification required, smaller footprint than other reactors, process suitable for neutralizing acids formed in-situ during treatment, and lesser interference from particulates. The disadvantages of a biofiltration system include complex feeding and neutralizing systems and the handling of toxic chemicals to control biomass growth.

Most bioreactors have large footprints, are maintenance intensive, operate in narrow bands of temperature and pressure requiring gas conditioning, and have primarily been used for odor control in clearly speciated air streams. Because of the size of a biofiltration system, existing space at the plant would not be available to support this type of system.

In conclusion, due to the above operational limitations, the technology is not considered technically feasible to reduce VOC emissions from the operations associated with the Sealing and Undercoating Line, Unit 002 and will be eliminated from further consideration in this BACT analysis.

(7) **Membrane Separation Technology** – This organic vapor/air separation technology involves the preferential transport of organic vapors through a non-porous gas separation membrane via a diffusion process similar to pumping saline water through a reverse osmosis membrane. In this system, the feed stream is compressed to approximately 150 psig and sent to a condenser where the liquid solvent is recovered. The condenser bleed stream is sent to the membrane module comprised of spirally-wound modules of thin film membranes separated by plastic mesh spacers. The concentrated stream from the membrane module is returned to the compressor for further recovery in the condenser. In conclusion, there is no known application of membrane separation technology for vehicle painting operations. Therefore, it will be eliminated from further consideration in this BACT analysis.

(8) **Ultraviolet (UV) Oxidation** – UV light oxidation (or photolytic destruction) of vapor-phase contaminants is accomplished by passing the off-gas in close proximity to a powerful UV light source. Oxidation occurs as a result of reactions with hydroxyl radicals produced by the UV light. The photo-oxidation usually is supplemented by a gaseous chemical oxidant (e g., ozone) or a solid catalyst (e.g., Titanium dioxide (TiO2)). The process is best used to treat easily oxidized organic compounds, such as those with double bonds (e.g., trichloroethylene, perchloroethylene and vinyl chloride) as well as simple aromatic compounds (e.g., toluene, benzene, xylene, and phenol).

Initially, this technology emerged as a biocidal technology for water treatment since bacteria are inactivated at a wavelength of 254 nanometers. Additionally, it was recognized that the technology was also useful in cleaving and ionizing certain organics so that they are easily removed by deionization and organic scavenging cartridges in a polishing loop. This technology has been proposed for offgas treatment from SVE and other groundwater remediation units by the DOE. Based upon a review of the previously listed resources including the RBLC database, there are no known applications of UV oxidization technology for vehicle painting systems. For this application, the technology suffers from the following effective technical applicability reservations:

(i) UV light frequency must be selected for maximum VOC removal based upon inlet stream VOC species and concentrations. Questionable effectiveness for a matrix of volatile constituents with variable photolytic destruction isotherms, interaction between chemical constituents, preferential destruction and premature breakthroughs for non-oxidizable species;

(ii) Pretreatment of inlet gas required to minimize ongoing cleaning and maintenance of UV reactor and quartz sleeves;

(iii) Potential fouling of solid TiO2 catalyst by particulates, moisture and long-chain organics;

(iv) Prohibitive energy requirements to power the UV reactor in excess of competing technologies; and

(v) Extensive maintenance and calibration requirements.

In conclusion, due to the above technical applicability reservations, this technology is not considered technically feasible to reduce VOC emissions from the Sealing and Undercoating Line, Unit 002 and will be eliminated from further consideration in this BACT analysis.

(9) **Non-Thermal Plasma (NTP) Technology** – NTP technology was developed by the Los Alamos National Lab for the DOD and DOE as part of a new generation of VOC control options. The intent of the research was to develop a low-cost solution with reduced energy and power requirements for controlling a host of air contaminants including VOCs. An NTP is an electrically neutral form of gas containing substantial concentrations of electrons, ions and other highly reactive free radicals which may be generated in the gas stream by application of electrical energy. In theory, the sequential chemical reactions result in the destruction of the air contaminants. Other research organizations such as Batelle have developed NTP variants such as the Gas Phase Corona Reactor (GPCR) which creates non-thermal plasma in a reactor filled with dielectic packing which significantly improves reactor performance.

This control technology has not been adopted as a BACT level control device according to the RBLC. Therefore it will be eliminated from further consideration in this BACT analysis.

(10) **Catalytic Incineration** – Catalytic incinerators are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. In the presence of a catalyst this reaction will take place at lower temperatures than those required for thermal oxidation. Temperatures between 350 and 500 degrees Celsius are common. The catalysts are metal oxides or precious metals supported in ceramic or metallic substrates. Catalytic incinerators can achieve control efficiencies of 95 to 99 percent. From an operational standpoint, the lower reaction temperature means that the requirement for supplemental fuel is reduced or eliminated during normal operation. The lower operating temperatures will also decrease the formation of oxides of nitrogen.

In conclusion, a catalytic incinerator by itself would not be technically feasible for controlling VOC emissions from the spray booths because of the large volume of air (i.e., > 50,000 cfm) and the low VOC concentration levels. The lower VOC concentration loading in the curing ovens may make catalytic incineration questionable when trying to achieve higher VOC destruction efficiencies (i.e., >95%). It is possible to use a catalytic incinerator in conjunction with a rotary concentrator to control VOC emission from coating operations. However, in the automotive industry, a rotary concentrator or booth recirculation is typically employed with a thermal oxidizer. This control option will be further evaluated for control of VOC emissions from the Sealing and Undercoating Line, Unit 002.

(11) **Thermal oxidation** – Thermal oxidizers are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. Dilute gas streams require auxiliary fuel (generally natural gas) to sustain combustion. Various incinerator designs are used by different manufacturers. The combustion chamber designs must provide high turbulence to mix the fuel and solvent laden air. The other requirement is enough residence time to ensure essentially complete combustion. Thermal oxidizers can be operated to achieve a wide range of control device efficiencies. Thermal incinerators can achieve control efficiencies of 95 to 99 percent.

Thermal oxidation has been determined to be a viable control technology for controlling VOC emissions from the Sealing and Undercoating Line, Unit 002. This technology is the preferred technology for controlling VOC emissions within the automotive industry.

In summary, thermal and catalytic oxidation, as well as rotary carbon concentrator tied to a thermal oxidizer, are the only VOC control technologies determined to be technically feasible in controlling VOC emissions from the Sealing and Undercoating Line, Unit 002.

STEP 3 – RANK REMAINING CONTROL TECHNOLOGIES
Various control alternatives were reviewed for technical feasibility in controlling VOC emissions from automobile Sealing and PVC Undercoating operations. The thermal oxidation, catalytic oxidation and rotary carbon concentrator tied to an oxidizer were the only ones determined to be technically feasible for controlling VOC emissions from automobile Sealing and PVC Undercoating operations. Since the overall VOC control efficiency for the rotary concentrator/oxidizer is less than that for thermal or catalytic oxidation, it was not evaluated under Step 4.

STEP 4 – EVALUATE MOST EFFECTIVE CONTROLS – SEALING AND PVC UNDERCOATING LINE
Thermal oxidation or catalytic oxidation are the most effective control devices in controlling VOC emissions from surface coating performed in automobile assembly plant. Catalytic and thermal oxidizers can achieve control device efficiencies of 95 to 99 percent.

EMISSION SOURCE	TOP LEVEL OF CONTROL	FURTHER EVALUATION REQUIRED	VOC CONTROL EFFICIENCY (OVERALL)*
Spray Booths and Oven	Thermal Oxidation/Catalytic Oxidation	YES	95%
Spray Booths Only	Thermal Oxidation/Catalytic Oxidation	YES	57%
Curing Oven Only	Thermal Oxidation/Catalytic Oxidation	YES	38%

Based upon 60/40 % split in VOC emissions and a control device destruction efficiency of 95%.

<u>Economic Economic Impact of VOC Control Alternatives-</u>
In determining the economic feasibility of VOC control alternatives, guidance provided by the USEPA was utilized. The economic feasibility of a specific control alternative is generally expressed in terms of annualized dollars per ton of VOC removed. By definition, cost effectiveness is the ratio of the total annualized cost of any control alternative to the annual quantity of pollutant the alternative removes from the process.

CASE 2 **A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (BOOTHS AND OVEN) AT NEW PRODUCTION CAPACITY**		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (scfm):	125,350
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing):	$1,671,000
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$167,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$129,000
	Freight (5% of Equipment, OAQPS Manual)	$92,000
	PE Total =	$2,084,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$167,000
	Handling and erection (14% of PE, OAQPS Manual)	$292,000
	Electrical (4% of PE, OAQPS Manual)	$83,000
	Piping (2% of PE, OAQPS Manual)	$42,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$42,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$656,000
	DC Total =	$2,740,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$208,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$104,000
	Contractor Fees (10% of PE, OAQPS Manual)	$208,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$63,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$63,000
	IC Total =	$646,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,386,000
	Capital Recovery at 7% interest over 10 years (0.1419*TCI)	$480,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000

CASE 2 A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (BOOTHS AND OVEN) AT NEW PRODUCTION CAPACITY		
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$5.00/1000 ft3)	$2,751,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.052/kW-hr)	$212,000
	DA Total =	$2,986,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$135,000
	IA Total =	$149,000
	O & M Total =	$3,135,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$3,615,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	36.66
	Annual VOC removal assuming 95% Removal Efficiency (tons)	34.83
	Annual cost effectiveness, $/ton of VOC removed	**$103,800**

PVC U-Coat includes PVC U-Coat UBC and PVC U-Coat sealer.

CASE 2A REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (OVEN ONLY)		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (scfm):	12,200
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing):	$362,000
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$36,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$28,000
	Freight (5% of Equipment, OAQPS Manual)	$20,000
	PE Total =	$471,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$38,000
	Handling and erection (14% of PE, OAQPS Manual)	$66,000
	Electrical (4% of PE, OAQPS Manual)	$19,000

CASE 2A REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (OVEN ONLY)		
	Piping (2% of PE, OAQPS Manual)	$9,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$9,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$171,000
	DC Total =	$642,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$47,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$24,000
	Contractor Fees (10% of PE, OAQPS Manual)	$47,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$14,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$14,000
	IC Total =	$146,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$788,000
	Capital Recovery at 7% interest over 10 years (0.1419*TCI)	$112,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$5.00/1000 ft3)	$268,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.052/kW-hr)	$21,000
	DA Total =	$312,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$32,000
	IA Total =	$46,000
	O & M Total =	$358,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$470,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	36.66
	Annual VOC removal assuming 95% Removal Efficiency (tons)	34.83
	Annual cost effectiveness, $/ton of VOC removed	**$13,500**

CASE 2B

CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (BOOTHS AND OVEN)

	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	125,350
	Purchased Equipment Costs (PE)	
	Catalytic Incineration System (OAQPS Budgetary Pricing Adjusted for 2010):	$984,000
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$95,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment in Indiana)	$73,000
	Freight (5% of Equipment, OAQPS Manual)	$52,000
	PE Total =	$1,193,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$95,000
	Handling and erection (14% of PE, OAQPS Manual)	$167,000
	Electrical (4% of PE, OAQPS Manual)	$48,000
	Piping (2% of PE, OAQPS Manual)	$24,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$24,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$388,000
	DC Total =	$1,581,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$119,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$60,000
	Contractor Fees (10% of PE, OAQPS Manual)	$119,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$36,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$36,000
	IC Total =	$370,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$1,951,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$277,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000

CASE 2B

CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (BOOTHS AND OVEN)

	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) - (0.001 ft^3 per acfm)	$81,478
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$659,000
	Electricity (0.0044 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$251,000
	DA Total =	$1,014,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$78,000
	IA Total =	$92,000
	O & M Total =	$1,106,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$1,383,,000
	Baseline VOC Emissions from the ED Dip/Rinse Tanks and Oven (tons/yr)	36.66
	Annual VOC removal assuming 95% Removal Efficiency (tons)	34.83
	Annual cost effectiveness, $/ton of VOC removed	**$39,700**

CASE 2C
CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (OVEN)

CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	12,200
	Purchased Equipment Costs (PE)	
	Catalytic Incineration System(OAQPS Budgetary Pricing adjusted for 2010):	$490,000
	Incinerator system with 95% regenerative heat exchanger, housing and frame, inlet and exhaust ductwork	
	Instrumentation (10% of Equipment, OAQPS Manual)	$49,000
	Access Way Addition (Engr. Estimate)	$35,000
	Sales Tax (7% of Equipment)	$38,000
	Freight (5% of Equipment, OAQPS Manual)	$27,000
	PE Total =	$639,000

CASE 2C CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (OVEN)		
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$51,000
	Handling and erection (14% of PE, OAQPS Manual)	$89,000
	Electrical (4% of PE, OAQPS Manual)	$26,000
	Piping (2% of PE, OAQPS Manual)	$13,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$13,000
	Site preparation etc. (Engr. Estimate)	$170,000
	DI Total =	$362,000
	DC Total =	$1,001,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$64,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$32,000
	Contractor Fees (10% of PE, OAQPS Manual)	$64,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$19,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$19,000
	IC Total =	$198,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$1,199,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$170,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) – (0.001 ft^3 per acfm)	$7,930
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$64,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$24000
	DA Total =	$119,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$48,000
	IA Total =	$62,000
	O & M Total =	$181,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$351,000

CASE 2C CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM SEALING AND UNDERCOATING LINE (OVEN)		
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	36.66
	Annual VOC removal assuming 95% Removal Efficiency (tons)	34.83
	Annual Cost Effectiveness, $/ton of VOC Removed	**$10,100**

As shown above, the cost effectiveness of using Catalytic Incineration System or Regenerative Thermal Oxidizer (RTO) for controlling VOC emissions from the Sealing and Undercoating Line Booth and Curing Oven ranges from $10,100 to $103,800, which is considered cost excessive. In addition the incremental cost to control the VOC emissions from 0.30 lb/gacs to 0.25 lb/gacs would be a lot greater . Additional control has been determined to not represent BACT based upon economic impact.

<u>Energy Impact of VOC Control Alternatives</u>
Incorporation of an RTO or Catalytic Incineration systems to control the VOC emissions from the Sealing and Undercoating Line Booth and Curing Oven will require the increased usage of natural gas, as well as electricity.

<u>Environmental Impact of VOC Control Alternatives</u>
Incorporation of an RTO or Catalytic Incineration systems to control VOC emissions from the Sealing and Undercoating Line Booth and Curing Oven will require the increased usage of natural gas, which will result in combustion related air pollutant emissions from the plant. Likewise, the increased usage of natural gas to support an RTO or Catalytic Incineration systems would result in additional emissions of greenhouse gas emissions (GHG).

Incorporation of the catalytic oxidation system to control the VOC emissions from the Sealing and Undercoating Line Booth and Curing Oven will require the periodic replacement and disposal of the spent catalyst which represents an additional environmental impact.

STEP 5 – SELECT BACT
The following Table presents a summary of recent BACT evaluations for Sealing and Undercoating operations obtained from USEPA's RACT/BACT/LAER Clearinghouse (RBLC):

Facility	RBLC-ID	Permit Number	Permit Date	VOC BACT Limit	BACT Controls	Comments
Proposed BACT: Subaru of Indiana Automotive				VOC - 0.30 lbs/gal applied coating solids based upon a daily volume weighted average	Use of low VOC content material when technically feasible and good operating/work practices	PVC line has an independent oven - no abatement
Current BACT: Subaru of Indiana Automotive				0.25 lb/gal coating solids based upon a daily volume weighted average	Use of low VOC content material when technically feasible and good operating/work practices	This limit was established in their 1987 PSD permit for Subaru and Isuzu vehicles only
GM - Flint Assembly	MI-0250	350-97	3/26/1999	VOC - 0.30 lb/gal (LAER)	Low VOC materials, variable HAP, up to 0.3 lb/gal	

Facility	RBLC-ID	Permit Number	Permit Date	VOC BACT Limit	BACT Controls	Comments
Nissan North America, Inc	MS-0045	1720-00073	4/2/2001	VOC - 0.30 lb/gal	Low VOC solvents, good work practices	
General Motors - Delta Township - Eaton Count, MI	MI-0326	209-00	9/26/2001	VOC - 0.3 lb/gacs (Sealers and adhesives)	No methyl acetate, good housekeeping practices, waterborne deadener material	
Daimler Chrysler - Sterling Heights Assembly Plant	MI-0298	269-80B	12/17/2001	VOC - 287.20 lb/day VOC - 35.90 t/yr	Low VOC, high transfer	
General Motors - Lansing Craft Centre - Lansing, MI	MI-0351	198-01	4/2/2002	VOC - 0.3 lb/gal (less water and exempt coatings)	Low VOC containing materials	
GMC Truck and Bus - Moraine Assembly Plant	OH-0295	08-02506	1/14/2003	VOC - 17.00 lb/hr VOC - 37.58 t/yr	--	
Hyundai Motor Manuf. - Montgomery, AL	AL-0191	209-0090-X001,X002,X 003	3/23/2004	VOC - 0.3 lb/gal	RTO, VOC limits in materials	Pollution reducing coating application technologies. No emission rate - BACT is controls and facility wide limit
Toyota Motor Manufacturing Texas - San Antonio, Texas	--	70661 PSD-TX-1036	6/21/2004	VOC - 0.3 lb/gal coating	Bake oven with RTO at 95% DRE - Misc. Body coatings (combined sealers, adhesives and undercoat)	
Daimler Chrysler Corporation - Body Shop	OH-0277	04-01357	8/31/2004	VOC - 9.90 lb/hr VOC - 12.0 t/rolling 12-Mo	Low VOC sealers and adhesives	No photochemicall y reactive materials can be applied. Restriction of 200,064 jobs/rolling 12-month period
Daimler-Chrysler - Lucas County, Ohio	OH-0280	04-01358	9/2/2004	VOC - 0.3 lb/gal (minus water)	Low VOC containing materials (LAER)	

Facility	RBLC-ID	Permit Number	Permit Date	VOC BACT Limit	BACT Controls	Comments
HONDA Manufacturing - Greensburg, Indiana	--	031-23360-00026	10/19/2006	VOC - 0.3 lb/gal, based upon a monthly volume weighted average	Primer/Surfacer Coating line drying oven and Sealer Deadener Coating Line drying oven controlled by RTO #1 at 95% DRE	$9,251/ton of VOC removed.
Toyota Motor Manufacturing Mississippi, Inc - Blue Springs, MS	--	2700-00045	6/5/2007	VOC - 0.3 lbs/gal	Use of low VOC content material when technically feasible and good operating/work practices	Includes sealers, adhesives and undercoat. Primer surfacer curing oven controlled by a thermal oxidizer
KIA Motors Manufacturing - Georgia	GA-0130	3711-285-0084-P-01-0	7/27/2007	VOC - 0.45 lb/gal monthly	Low VOC materials	
HONDA Manufacturing of Alabama, LLC - Lincoln, AL	AL-0228	--	5/17/2007	sealer/deadener VOC - 0.30 lb/gal as applied (From RBLC)	RTO2 controlling both the E-Coat Oven and Sealer Deadener Oven	No cost analysis done based upon statement from Alabama's Permit writer

The above table presents a summary of recent BACT determination from the USEPA's RACT/BACT/LAER Clearinghouse. Most of the sources (General Motors, Lansing Craft Centre - Lansing, Michigan; Daimler-Chrysler - Lucas County, Ohio; Toyota Motor Manufacturing Texas - San Antonio, Texas; Toyota Manufacturing Mississippi, Inc. - Blue Spring, Mississippi; Hyundai Motor Manufacturing. - Montgomery, Alabama; HONDA Manufacturing of Indiana, LLC - Greensburg, Indiana; HONDA Manufacturing of Alabama, LLC Plant 2 - Lincoln, Alabama; Daimler Chrysler - Sterling Heights Assembly Plant - Michigan and Nissan North America, Inc. - Mississippi) in the above table have VOC BACT limit of 0.30 pound per gallon (lb/gal). However, General Motors, Delta Township - Eaton County, Michigan and GM - Flint Assembly - Flint, Michigan have the most stringent BACT of 0.30 pound per gallon of applied coating solids (lb/gacs).

Toyota Motor Manufacturing Texas - San Antonio, Texas; Toyota Manufacturing Mississippi, Inc. - Blue Spring, Mississippi; Hyundai Motor Manufacturing. - Montgomery, Alabama; HONDA Manufacturing of Indiana, LLC - Greensburg, Indiana and HONDA Manufacturing of Alabama, LLC Plant 2 are the only sources that employ Thermal Oxidizers to meet the VOC BACT limit of 0.30 lb/gal from high VOC content materials. The rest of the sources in the above table utilize low VOC materials to meet the VOC BACT limit of 0.30 lb/gal and 0.30 lb/gacs without the use of control devices. So, while BACT is presumptively the use of a Regenerative Thermal Oxidizer (RTO), even these two sources are not required to reduce emissions to 0.25 lb/gacs.

As can be seen in the cost analysis, Subaru would have to spend a minimum of $10,100 per ton of VOC removed if a catalytic incineration system was installed to control VOC emissions down to 0.25 lbs/gacs from the Sealing and PVC Undercoating Oven. In the case of Honda Manufacturing of Indiana RTO #1 controls both the Primer/Surfacer Coating line drying oven and Sealer Deadener Coating Line drying oven at a cost of $9,251/ton of VOC removed, while the Honda Manufacturing of Alabama was required to control both airstream from the E-coat oven and the sealer deadener oven by one (1) RTO2 with no cost estimate done. In addition, the incremental cost to control the VOC emissions from 0.30 lb/gacs to 0.25 lb/gacs would be a lot greater. While other sources do have control equipment installed, they utilize higher VOC containing materials and controlling combinations of airstream resulting in more VOC removal than Subaru further resulting in a lower cost per ton of VOC control. Since these materials are water based with high solid contents, the use of a control device to destroy the VOCs is not economically feasible due to the low VOC concentration. Other high VOC emitting operations at the Subaru plant are already individually controlled by thermal/catalytic incinerators; however, there is no capacity to duct the Sealing and Undercoating Line due to its high air stream but low VOC concentration. Furthermore, material change is not an option for the new non Subaru model and Subaru existing vehicles done at SIA because it will compromise the quality standards (appearance and overall durability) or product specifications set for these vehicles.

Conclusion: Based upon the above analysis, the PSD BACT for the Sealing and PVC Undercoating Line, identified as Line 002 has been determined to be the following:

(a) The VOC emissions from the Sealing and PVC Undercoating Line, identified as Line 002 (PVC Coating Booths #1 and #2) shall not exceed 0.30 pound per gallon applied coating solids (lb/gacs), based upon a daily volume weighted average.

TWOTONE AND REPAIR BOOTH/TOPCOAT BOOTH #3 VOC BACT ANALYSIS

The Twotone and Repair Booth (part of the Topcoat Body Paint System) will be physically changed by replacing the existing manual application system to allow for the application of waterborne basecoat and solventborne clearcoat materials. After the change, the Twotone Coating Line will be referred to as Topcoat #3**.**

STEPS 1 AND 2 – IDENTIFICATION/ELIMINATION CONTROL TECHNOLOGIES OF VOC

The following control technologies were identified and evaluated for controlling VOC emissions associated with the Topcoat Line 3 emissions sources (waterborne basecoat and solventborne clearcoat booths and oven).

(a) **Condensation System** – These systems utilize a refrigerant to cool the exhaust stream, effect a phase change from gas to liquid for a target volatile constituent with ascertainable phase-change conditions, collect the liquid, and thereby lower the concentration in the gas phase. However, this technology is only effective under high concentration gradients in excess of 100 ppmv and low volume of air. The exhaust streams associated with the SIA operations are very dilute consisting of many constituents and high volumes of air which would preclude any effective technical applicability of a condensation system.

In conclusion, condensation technology is not considered technically feasible to reduce VOC emissions from the Topcoat Line 3 coating system. Air flow from this system would be well outside the flow range associated with condensation units. Condensation systems are therefore eliminated from further consideration in this BACT analysis because of technical infeasibility.

(b) **Carbon Adsorption** – Activated carbon beds have a track record of successful application for adsorbing specific VOC emissions. However, the application of the technology is subject to certain limitations which can negate its applicability for specific organic streams. Whenever an exhaust stream contains other contaminants such as particulates and moisture, the technology loses its efficiency. The presence of moisture and particulates in the stream will require significant gas pre-conditioning since these interferences are deleterious to the efficiency of the carbon bed. In effect, they induce a masking phenomenon reducing the available adsorption surface area.

In addition, very dilute exhaust streams would significantly impair the effective technical applicability of a carbon adsorption system which starts to collapse at inlet VOC concentration less than approximately 50 ppmv. In addition, the exhaust from the various operations would contain a highly variable complex of volatile compounds which would limit the effectiveness of carbon adsorption due to the interaction between chemical components, preferential adsorption

and premature breakthrough. The desorption cycle would involve reentrainment of the VOCs unless they were further controlled by some form of an oxidization scheme.
In conclusion, carbon adsorption technology by itself is not considered technically feasible to reduce VOC emissions from the sources associated with Topcoat Line 3 for the reasons noted above. Carbon adsorption by itself is therefore eliminated from further consideration due to technical infeasibility in this BACT analysis.

(c) **Polyad™ System** – This is an innovative system offered by a microwave technology vendor combining resin fluidized bed adsorption with microwave dynamic bed desorption that claims VOC control primarily for stripping VOCs from SVE (soil vapor extraction) units, air stripping at remediation sites, and solvent recovery. In addition to the fact that the technology does not have a track record for vehicle painting operations, there are other significant reservations regarding its technical applicability. Any adsorption system would suffer from similar limitations as those summarized below:

(1) Impaired efficiency due to dilute inlet stream concentrations as discussed earlier;
(2) Effect of interferences such as particulates, moisture and the presence of certain constituents which are particularly deleterious as discussed earlier;
(3) Reentrainment of VOCs during microwave desorption; and
(4) Microwave desorption technology is not a proven technology for application in the surface coating industry.

In conclusion, the Polyad™ adsorption/microwave desorption technology is not considered technically feasible to reduce VOC emissions from Topcoat Line 3, and will be eliminated from further consideration in this BACT analysis.

(d) **Flares** – A VOC combustion control process, in which the VOCs are piped to a remote, usually elevated location and burned in an open flame in the open air using a specially designed burner tip, auxiliary fuel, and air to promote mixing for destruction. Completeness of combustion in a flare is governed by flame temperature, residence time in the combustion zone, turbulent mixing of the gas stream components to complete the oxidation reaction, and available oxygen for free radical formation. Combustion is complete if all VOC emissions are converted to carbon dioxide and water. Incomplete combustion results in some of the VOCs being unaltered or converted to other organic compounds such as aldehydes or acids. This technology has been determined to be inappropriate for the type of emission sources associated with the Topcoat Line 3 system due to the dilute exhaust stream.

In conclusion, a flare is not considered to be technically feasible to reduce VOC emissions from the Topcoat Line 3 System and will be eliminated from further consideration in this BACT analysis.

(e) **Volume/Rotary Concentrators** - This twin part system also known as the rotary concentrator serves to concentrate the VOC's in the inlet stream prior to an adsorption or oxidation scheme. The first section consists of a slowly rotating concentrator wheel that utilizes zeolites or carbon deposited on a substrate, which adsorbs the organics as they are exhausted from the original process and passed through the wheel. A sector of the concentrator wheel is partitioned off from the main section of the rotor and clean heated air is passed through this section to desorb the organics resulting in higher VOC concentration in a smaller gas flow. Volume/rotary concentrators are usually installed upstream to an adsorption or oxidization configuration for ultimate VOC destruction.

In conclusion, the technology is considered technically feasible to reduce VOC emissions from the Topcoat Line 3 system. Further consideration of this technology in conjunction with thermal oxidation is provided in this BACT analysis. The economic, energy and environmental impacts associated with this technology are further discussed in the BACT analysis.

(f) **Biofiltration –** This is an air pollution control technology in which off-gases containing biodegradable organic compounds are vented, under controlled temperature and humidity, through a biologically active material. The microorganisms contained in the bed of compost-like material digest or biodegrade the organic to CO_2 and water. This technology has been largely utilized for control of odorous emissions. The process of biofiltration utilizes a biofilm containing a population of microorganisms immobilized on a porous substrate such as peat, soil, sand, wood, compost, or numerous synthetic media. As an air stream passes through the biolfilter, the contaminants in the air stream partition from the air phases to the liquid phase of the biofilm. Once the contaminants pass into the liquid phase, they become bioavailable for complex oxidative processes by the microorganisms inhabiting the biofilm.

The bioscrubber is an enhancement of the biotrickling filter whereby a packed tower is flooded with a liquid-phase and the discharge effluent is retained in a sump for added time to improve the microbe contact time. The advantages of a bioscrubber are as follows - no gas conditioning or humidification required, smaller footprint than other reactors, process suitable for neutralizing acids formed in-situ during treatment, and lesser interference from particulates. The disadvantages of a biofiltration system include complex feeding and neutralizing systems and the handling of toxic chemicals to control biomass growth.

Most bioreactors have large footprints, are maintenance intensive, operate in narrow bands of temperature and pressure requiring expensive gas conditioning, and have primarily been used for odor control in clearly speciated air streams. Because of the size of a biofiltration system, existing space at the plant would not be available to support this type of system.

In conclusion, due to the above operational limitations, the technology is not considered technically feasible to reduce VOC emissions from the Topcoat Line 3 System, and will be eliminated from further consideration in this BACT analysis due to technical reasons.

(g) **Membrane Separation Technology** – This organic vapor/air separation technology involves the preferential transport of organic vapors through a non-porous gas separation membrane via a diffusion process analogous to pumping saline water through a reverse osmosis membrane. In this system, the feed stream is compressed to approximately 150 psig and sent to a condenser where the liquid solvent is recovered. The condenser bleed stream is sent to the membrane module comprised of spirally-wound modules of thin film membranes separated by plastic mesh spacers. The concentrated stream from the membrane module is returned to the compressor for further recovery in the condenser. There is no known application of membrane separation technology for coating systems.

In conclusion, since there is no known application of this technology for coating systems, this technology is not considered technically feasible to reduce VOC emissions from the Topcoat Line 3 System and will be eliminated from further consideration in this BACT analysis.

(h) **Ultraviolet (UV) Oxidation** – UV light oxidation (or photolytic destruction) of vapor-phase contaminants is accomplished by passing the off-gas in close proximity to a powerful UV light source. Oxidation occurs as a result of reactions with hydroxyl radicals produced by the UV light. The photo-oxidation usually is supplemented by a gaseous chemical oxidant (e.g., ozone) or a solid catalyst (e.g., TiO_2). The process is best used to treat easily oxidized organic compounds, such as those with double bonds (e.g., trichloroethylene, perchloroethylene and vinyl chloride) as well as simple aromatic compounds (e.g., toluene, benzene, xylene, and phenol).

Initially, this technology emerged as a biocidal technology for water treatment since bacteria are inactivated at a wavelength of 254 nanometers. Additionally, it was recognized that the technology was also useful in cleaving and ionizing certain organics so that they are easily removed by deionization and organic scavenging cartridges in a polishing loop. This technology has been proposed for offgas treatment from SVE and other groundwater remediation units by the DOE. Based upon a review of the previously listed resources including the RBLC database, there are no known applications of UV oxidization technology for coating systems. For this application, the technology suffers from the following effective technical applicability reservations:

(1) UV light frequency must be selected for maximum VOC removal based upon inlet stream VOC species and concentrations. Questionable effectiveness for a matrix of volatile constituents with variable photolytic destruction isotherms, interaction between chemical constituents, preferential destruction and premature breakthroughs for non-oxidizable species;
(2) Pretreatment of inlet gas required to minimize ongoing cleaning and maintenance of UV reactor and quartz sleeves;
(3) Potential fouling of solid TiO_2 catalyst by particulates, moisture and long-chain organics;
(4) Prohibitive energy requirements to power the UV reactor in excess of competing technologies; and
(5) Extensive maintenance and calibration requirements.

In conclusion, due to the above technical applicability reservations, this technology is not considered technically feasible to reduce VOC emissions from the Topcoat Line 3 System and will be eliminated from further consideration in this BACT analysis.

(i) **Non-Thermal Plasma (NTP) Technology** – NTP technology was developed by the Los Alamos National Lab for the DOD and DOE as part of a new generation of VOC control options. The intent of the research was to develop a low-cost solution with reduced energy and power requirements for controlling a host of air contaminants including VOCs. An NTP is an electrically neutral form of gas containing substantial concentrations of electrons, ions and other highly reactive free radicals which may be generated in the gas stream by application of electrical energy. In theory, the sequential chemical reactions result in the destruction of the air contaminants. Other research organizations such as Batelle have developed NTP variants such as the Gas Phase Corona Reactor (GPCR) which creates non-thermal plasma in a reactor filled with dielectic packing which significantly improves reactor performance.

This control technology has not been adopted as a BACT level control device according to the RBLC. Therefore it will be eliminated from further consideration in this BACT analysis.

(j) **Catalytic Incineration –** Catalytic incinerators are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. In the presence of a catalyst this reaction will take place at lower temperatures than those required for thermal oxidation. Temperatures between 350 and 500 degrees Celsius are common. The catalysts are metal oxides or precious metals where they are supported on ceramic or metallic substrates. Catalytic incinerators can achieve control efficiencies of 95 to 99 percent.

From an operational standpoint, the lower reaction temperature means that the requirement for supplemental fuel is reduced or eliminated during normal operation. The lower operating temperatures will also decrease the formation of oxides of nitrogen.

In conclusion, the use of catalytic oxidation to control VOC emissions from the Topcoat Line 3 System has been deemed to be technically feasible. Further consideration of this technology in conjunction is provided in this BACT analysis. The economic, energy and environmental impacts associated with this technology are further discussed in the BACT analysis.

(k) **Thermal oxidation** – Thermal oxidizers are control devices in which the solvent laden air is preheated and the organic HAPs are ignited and combusted to carbon dioxide and water. Dilute gas streams require auxiliary fuel (generally natural gas) to sustain combustion. Various incinerator designs are used by different manufacturers. The combustion chamber designs must provide high turbulence to mix the fuel and solvent laden air. The other requirement is enough residence time to ensure essentially complete combustion. Thermal incinerators can achieve control efficiencies of 95 to 99 percent.

In conclusion, the use of thermal oxidation to control VOC emissions from the Topcoat Line 3 System has been deemed to be technically feasible. Further consideration of this technology in conjunction is provided in this BACT analysis. The economic, energy and environmental impacts associated with this technology are further discussed in the BACT analysis.

STEP 3 – RANK REMAINING CONTROL TECHNOLOGIES

As shown in Steps 1 and 2, the remaining viable control technologies for the Topcoat Line 3 are as follows:

- Catalytic Oxidation – 95% -99%
- Thermal Oxidation – 95% -99%
- Rotary Concentration/Thermal Oxidation – 85%

These technologies have been shown to be effective at reducing VOC emissions from coating systems with large volumes of air and low VOC concentration levels and can be considered feasible option for controlling VOC emissions from the Topcoat Line 3 System.

Thermal oxidation or catalytic oxidation are the most effective control devices in controlling VOC emissions from surface coating performed in automobile assembly plant. Catalytic and thermal incinerators can achieve control efficiencies of 95 to 99 percent.

EMISSION SOURCE	TOP LEVEL OF CONTROL	VOC CONTROL EFFICIENCY (OVERALL)	LEVEL OF CONTROL	VOC CONTROL EFFICIENCY (OVERALL)
Basecoat and Clearcoat Booths and Oven	Thermal Oxidation / Catalytic Oxidation	95%	Rotary Concentration / Thermal Oxidation	85%
Clearcoat Booth Only and Oven		77.8%		69.6%
Basecoat Booth Only and Oven		36.2%		32.4%

STEP 4 – EVALUATE MOST EFFECTIVE CONTROLS – TOPCOAT LINE 3

Further evaluation per EPA's top-down approach is required, including economic, energy and environmental impacts are required for controlling VOC emissions from the Topcoat #3 booth and oven.

Economic Impact of VOC Control Alternatives

CASE 3		
A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery)		
FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (ACFM):	100,000
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing Adjusted for 2010):	$1,668,924
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$167,000
	Access Way Addition (Engr. Estimate)	$25,000

CASE 3		
A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery)		
FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
	Sales Tax (7% of Equipment in Indiana)	$129,000
	Freight (5% of Equipment, OAQPS Manual)	$92,000
	PE Total =	$2,082,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$167,000
	Handling and erection (14% of PE, OAQPS Manual)	$291,000
	Electrical (4% of PE, OAQPS Manual)	$83,000
	Piping (2% of PE, OAQPS Manual)	$42,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$42,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$655,000
	DC Total =	$2,737,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$208,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$104,000
	Contractor Fees (10% of PE, OAQPS Manual)	$208,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$62,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$62,000
	IC Total =	$644,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,381,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$481,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$3,774,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$190,191
	DA Total =	$3,987,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$135,000
	IA Total =	$149,000
	O & M Total =	$4,136,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$4,617,000

CASE 3		
A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery)		
FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
	Baseline VOC Emissions from the Clearcoat Booth and Oven (tons/yr) - Topcoat Line 3	30.69
	Annual VOC removal assuming 95% Removal Efficiency (tons)	29.16
	Annual cost effectiveness, $/ton of VOC removed	**$158,300**

CASE 3A A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (ACFM):	100,000
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing Adjusted for 2010):	$1,668,924
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$167,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment in Indiana)	$129,000
	Freight (5% of Equipment, OAQPS Manual)	$92,000
	PE Total =	$2,082,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$167,000
	Handling and erection (14% of PE, OAQPS Manual)	$291,000
	Electrical (4% of PE, OAQPS Manual)	$83,000
	Piping (2% of PE, OAQPS Manual)	$42,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$42,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$655,000
	DC Total =	$2,737,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$208,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$104,000
	Contractor Fees (10% of PE, OAQPS Manual)	$208,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$62,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$62,000
	IC Total =	$644,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,381,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$481,000

CASE 3A
A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery)
FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY

OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$3,774,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$190,191
	DA Total =	$3,987,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$135,000
	IA Total =	$149,000
	O & M Total =	$4,136,000
	TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)	$4,617,000
	Baseline VOC Emissions from the Clearcoat Booth and Oven (tons/yr) - Topcoat Line 3	65.97
	Annual VOC removal assuming 95% Removal Efficiency (tons)	62.67
	Annual cost effectiveness, $/ton of VOC removed	**$73,700**

CASE 3B
A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery)
FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY

CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (ACFM):	200,000
	Purchased Equipment Costs (PE)	
	Regenerative Thermal Oxidation System (OAQPS Budgetary Pricing Adjusted for 2010):	$3,071,208
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$307,000
	Access Way Addition (Engr. Estimate)	$25,000

CASE 3B A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
	Sales Tax (7% of Equipment in Indiana)	$236,000
	Freight (5% of Equipment, OAQPS Manual)	$169,000
	PE Total =	$3,808,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$305,000
	Handling and erection (14% of PE, OAQPS Manual)	$533,000
	Electrical (4% of PE, OAQPS Manual)	$152,000
	Piping (2% of PE, OAQPS Manual)	$76,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$76,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$1,172,000
	DC Total =	$4,980,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$381,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$190,000
	Contractor Fees (10% of PE, OAQPS Manual)	$381,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$114,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$114,000
	IC Total =	$1,180,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$6,160,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$877,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$7,549,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$380,382
	DA Total =	$7,952,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$246,000
	IA Total =	$260,000
	O & M Total =	$8,212,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$9,089,000

CASE 3B A NEW REGENERATIVE THERMAL OXIDATION SYSTEM (w/ 70% Heat Recovery) FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN - TOPCOAT LINE 3 AT NEW PRODUCTION CAPACITY		
	Baseline VOC Emissions from the Basecoat Booth (tons/yr) - Topcoat Line 3	80.55
	Annual VOC removal assuming 95% Removal Efficiency (tons)	76.53
	Annual cost effectiveness, $/ton of VOC removed	**$118,800**

CASE 3B A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	100,000
	Purchased Equipment Costs (PE)	
	Carbon Concentrator with Thermal Incineration (Vendor Estimate adjusted for 2010):	$1,487,117
	Instrumentation (10% of Equipment, OAQPS Manual)	$149,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$115,000
	Freight (5% of Equipment, OAQPS Manual)	$82,000
	PE Total =	$1,858,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$149,000
	Handling and erection (14% of PE, OAQPS Manual)	$260,000
	Electrical (4% of PE, OAQPS Manual)	$74,000
	Piping (2% of PE, OAQPS Manual)	$37,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$37,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$587,000
	DC Total =	$2,445,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$186,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$93,000
	Contractor Fees (10% of PE, OAQPS Manual)	$186,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$56,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$56,000
	IC Total =	$577,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,022,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$430,000

CASE 3B A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$5,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$9,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow (10% of total air flow is treated in oxidizer following concentration) for 5,664 hrs/yr @ 8.6/1000 ft^3	$244,000
	Electricity (0.003705 kW/ acfm flow for 5,664 hrs/yr @ $0.0586/kW-hr)	$50,000
	DA Total =	$308,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$8,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$121,000
	IA Total =	$129,000
	O & M Total =	$437,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$867,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	30.69
	Annual VOC removal assuming 95% Removal Efficiency (tons)	29.16
	Annual Cost Effectiveness, $/ton of VOC Removed	**$33,200**

CASE 3C A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	100,000
	Purchased Equipment Costs (PE)	
	Carbon Concentrator with Thermal Incineration (Vendor Estimate adjusted for 2010):	$1,487,117
	Instrumentation (10% of Equipment, OAQPS Manual)	$149,000
	Access Way Addition (Engr. Estimate)	$25,000

CASE 3C A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
	Sales Tax (7% of Equipment)	$115,000
	Freight (5% of Equipment, OAQPS Manual)	$82,000
	PE Total =	$1,858,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$149,000
	Handling and erection (14% of PE, OAQPS Manual)	$260,000
	Electrical (4% of PE, OAQPS Manual)	$74,000
	Piping (2% of PE, OAQPS Manual)	$37,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$37,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$587,000
	DC Total =	$2,445,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$186,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$93,000
	Contractor Fees (10% of PE, OAQPS Manual)	$186,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$56,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$56,000
	IC Total =	$577,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,022,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$430,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$5,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$9,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow (10% of total air flow is treated in oxidizer following concentration) for 5,664 hrs/yr @ 8.6/1000 ft^3	$244,000
	Electricity (0.003705 kW/ acfm flow for 5,664 hrs/yr @ $0.0586/kW-hr)	$50,000
	DA Total =	$308,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$8,000

CASE 3C A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$121,000
	IA Total =	$129,000
	O & M Total =	$437,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$867,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	65.95
	Annual VOC removal assuming 95% Removal Efficiency (tons)	56.08
	Annual Cost Effectiveness, $/ton of VOC Removed	**$15,500**

CASE 3D A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	200,000
	Purchased Equipment Costs (PE)	
	Carbon Concentrator with Thermal Incineration (Vendor Estimate adjusted for 2010):	$3,305,144
	Instrumentation (10% of Equipment, OAQPS Manual)	$331,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$255,000
	Freight (5% of Equipment, OAQPS Manual)	$182,000
	PE Total =	$4,098,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$328,000
	Handling and erection (14% of PE, OAQPS Manual)	$574,000
	Electrical (4% of PE, OAQPS Manual)	$164,000
	Piping (2% of PE, OAQPS Manual)	$82,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$82,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$1,260,000
	DC Total =	$5,358,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$410,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$205,000

CASE 3D A NEW ROTARY CONCENTRATOR WITH THERMAL INCINERATION FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN AT NEW PRODUCTION CAPACITY		
	Contractor Fees (10% of PE, OAQPS Manual)	$410,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$123,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$123,000
	IC Total =	$1,271,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$6,629,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$944,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$5,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$9,000
	Natural Gas Requirement (0.00835 scfm gas/acfm exhaust air flow (10% of total air flow is treated in oxidizer following concentration) for 5,664 hrs/yr @ 8.6/1000 ft^3	$488,000
	Electricity (0.0015 kW-hr/ acfm flow for 5,664 hrs/yr @ $0.0586/kW-hr)	$100,000
	DA Total =	$602,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$8,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$265,000
	IA Total =	$273,000
	O & M Total =	$875,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$1,819,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	80.55
	Annual VOC removal assuming 95% Removal Efficiency (tons)	68.47
	Annual Cost Effectiveness, $/ton of VOC Removed	**$26,600**

CASE 4 A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	100,000
	Purchased Equipment Costs (PE)	
	Catalytic Incineration System (OAQPS Budgetary Pricing adjusted for 2010):	$1,014,444
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$101,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$78,000
	Freight (5% of Equipment, OAQPS Manual)	$56,000
	PE Total =	$1,274,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$102,000
	Handling and erection (14% of PE, OAQPS Manual)	$178,000
	Electrical (4% of PE, OAQPS Manual)	$51,000
	Piping (2% of PE, OAQPS Manual)	$25,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$25,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$411,000
	DC Total =	$1,685,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$127,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$64,000
	Contractor Fees (10% of PE, OAQPS Manual)	$127,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$38,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$38,000
	IC Total =	$394,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$2,079,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$296,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000

CASE 4
A NEW CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM BASECOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY

	Catalyst Replacement ($650/ft^3 for metal oxide) – (0.001 ft^3 per acfm)	$65,000
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$904,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$226,000
	DA Total =	$1,218,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$83,000
	IA Total =	$97,000
	O & M Total =	$1,315,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$1,611,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	30.69
	Annual VOC removal assuming 95% Removal Efficiency (tons)	29.16
	Annual Cost Effectiveness, $/ton of VOC Removed	**$55,200**

CASE 4A
A NEW CATALYTIC INCINERATION SYSTEM
FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY

CAPITAL COSTS

	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	100,000
	Purchased Equipment Costs (PE)	
	Catalytic Incineration System (OAQPS Budgetary Pricing adjusted for 2010):	$1,014,444
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$101,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$78,000
	Freight (5% of Equipment, OAQPS Manual)	$56,000
	PE Total =	$1,274,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$102,000
	Handling and erection (14% of PE, OAQPS Manual)	$178,000

CASE 4A A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
	Electrical (4% of PE, OAQPS Manual)	$51,000
	Piping (2% of PE, OAQPS Manual)	$25,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$25,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$411,000
	DC Total =	$1,685,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$127,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$64,000
	Contractor Fees (10% of PE, OAQPS Manual)	$127,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$38,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$38,000
	IC Total =	$394,000
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$2,079,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$296,000
OPERATION AND MAINTENANCE (O & M)		
	DIRECT ANNUAL COSTS (DA)	
	Operating Labor:	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	Maintenance:	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) – (0.001 ft^3 per acfm)	$65,000
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$904,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$226,000
	DA Total =	$1,218,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$83,000
	IA Total =	$97,000
	O & M Total =	$1,315,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$1,611,000

CASE 4A A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM CLEARCOAT BOOTH AND OVEN AT NEW PRODUCTION CAPACITY		
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	65.97
	Annual VOC removal assuming 95% Removal Efficiency (tons)	62.67
	Annual Cost Effectiveness, $/ton of VOC Removed	**$25,700**

CASE 4B A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN AT NEW PRODUCTION CAPACITY		
CAPITAL COSTS		
	DIRECT CAPITAL COSTS (DC)	
	Gas Flow (SCFM):	200,000
	Purchased Equipment Costs (PE)	
	Catlytic Incineration System (OAQPS Budgetary Pricing adjusted for 2010):	$1,488,336
	Incinerator system with 95% regenerative heat exchanger, housing and frame,	
	inlet and exhaust ductwork.	
	Instrumentation (10% of Equipment, OAQPS Manual)	$149,000
	Access Way Addition (Engr. Estimate)	$25,000
	Sales Tax (7% of Equipment)	$115,000
	Freight (5% of Equipment, OAQPS Manual)	$82,000
	PE Total =	$1,859,000
	Direct Installation Costs (DI)	
	Foundations and supports (8% of PE, OAQPS Manual)	$149,000
	Handling and erection (14% of PE, OAQPS Manual)	$260,000
	Electrical (4% of PE, OAQPS Manual)	$74,000
	Piping (2% of PE, OAQPS Manual)	$37,000
	Insulation + Painting (2% of PE, OAQPS Manual)	$37,000
	Site preparation etc. (Engr. Estimate)	$30,000
	DI Total =	$587,000
	DC Total =	$2,446,000
	INDIRECT CAPITAL COSTS (IC)	
	Engineering and Supervision (10% of PE, OAQPS Manual)	$186,000
	Construction and Field Expenses (5% of PE, OAQPS Manual)	$93,000
	Contractor Fees (10% of PE, OAQPS Manual)	$186,000
	Start-up + Performance (3% of PE, OAQPS Manual)	$56,000
	Over-all Contingencies (3% of PE, OAQPS Manual)	$56,000
	IC Total =	$577,000

CASE 4B A NEW CATALYTIC INCINERATION SYSTEM FOR 95% CONTROL OF VOC FROM BASECOAT/CLEARCOAT BOOTHS AND OVEN AT NEW PRODUCTION CAPACITY		
	TOTAL CAPITAL INVESTMENT (TCI) = Sum (DC + IC) =	$3,023,000
	Capital Recovery at 7% interest over 10 years (0.1424*TCI)	$430,000
<u>**OPERATION AND MAINTENANCE (O & M)**</u>		
	DIRECT ANNUAL COSTS (DA)	
	<u>Operating Labor:</u>	
	Operator (1 hr/day, 365 days/yr, $20/hr) + Supervisor (15% of Operator)	$8,000
	<u>Maintenance:</u>	
	Labor (1 hr/day, 365 days/yr, $20/hr) + Materials (100% of Labor)	$15,000
	Catalyst Replacement ($650/ft^3 for metal oxide) – (0.001 ft^3 per acfm)	$130,000
	Natural Gas Requirement (0.002 scfm gas/acfm exhaust air flow @$8.60/1000 ft3)	$1,808,000
	Electricity (0.003705 kW/ acfm flow for 8760 hrs/yr @ $0.0586/kW-hr)	$452,000
	DA Total =	$2,413,000
	INDIRECT ANNUAL COSTS (IA)	
	Overhead (60% of maintenance parts & labor costs, OAQPS Manual)	$14,000
	Admin., Property Tax, Insurance (4% of TCI, OAQPS Manual)	$121,000
	IA Total =	$135,000
	O & M Total =	$2,548,000
TOTAL ANNUAL CAPITAL AND O & M COSTS (including Capital Recovery)		$2,978,000
	Baseline VOC Emissions from the Booths and Oven (tons/yr)	80.55
	Annual VOC removal assuming 95% Removal Efficiency (tons)	76.53
	Annual Cost Effectiveness, $/ton of VOC Removed	**$38,900**

As shown above, the cost effectiveness of using Rotary Concentration System with Thermal Incineration, Catalytic Incineration System or Regenerative Thermal Oxidizer (RTO) for controlling VOC emissions from the Twotone and Repair Booth/Topcoat Line 3 (Clearcoat/Basecoat and Oven, Clearcoat Booth and Oven, Basecoat Booth and Oven), ranges from $15,500 to $158,300, which is considered cost excessive. Additional control has been determined to not represent BACT based upon economic impact.

RETROFITTING EXISTING TWOTONE AND REPAIR BOOTH/TOPCOAT #3 CATALYTIC INCINERATOR

A physical change is proposed to be made to the existing Twotone and Repair Booth to convert to the application of waterborne basecoat and solventborne clearcoat to the vehicle body. After the changes are made to this booth, the coating system will be referred to as Topcoat #3, which will consist of a waterborne basecoat spray application zone, heated flash zone and a solventborne clearcoat spray application zone. Following the spray application zones is an existing curing oven, which is used to support the Twotone system. Pursuant to the original PSD permit for the SIA plant, BACT for the Twotone and Repair Booth has been established as the control of VOC emissions from the system's Curing Oven, which is accomplished by the use of a Catalytic Incinerator. This incinerator is tested every 2.5 years to determine its VOC destruction efficiency.

The design parameters for the existing Catalytic Incinerator for the Twotone and Repair Booth are as follows:

Parameter	Topcoat #3 (Twotone) Incinerator
Air Flow	Design Maximum: 4,000 scfm Actual Flow; 2,270 scfm Remaining Capacity: 1,730 scfm
VOC Loading	Design Maximum: 35 lb/hr Current Loading: 24.7 lb/hr Remaining Capacity: 10.3 lb/hr

As shown above, the installed oxidizer has a design flow rate of 4,000 standard cubic feet per minute (scfm) and the actual volume of air being sent to this oxidizer from the Twotone and Repair Booth is approximately 2,270 (scfm). This leaves approximately 1,700 scfm of flow available for abatement. If additional VOC emissions from coating operations in the Topcoat #3 Coating Line are to be controlled in the existing Catalytic Incinerator, the incinerator will have to possess sufficient capacity to handle the additional air flow from one or more of the application zones of the Topcoat #3 booth. Air flow requirements from the three zones of the booth are provided in the following table.

Additional Incinerator Capacity for VOC Control at Topcoat #3 Booth	
Air Flow	<u>Additional required air flow:</u> • Basecoat - BC (Topcoat #3) booth exhaust – 101,000 scfm; • Heated Flash- HF (Topcoat #3) exhaust – 5,000 scfm, and; • Clearcoat - CC (Topcoat #3) booth exhaust – 101,000 scfm.

SIA engineering has evaluated the Twotone coating system and has concluded that the flow rates of exhaust air from the spray application zones and the heated flash zone are well above the remaining capacity of the incinerator currently in place as presented in the table above. The existing incinerator does not have enough residual capacity to incorporate even the smallest air flow from the booth that is from the heated flash zone.

Discussion with CPI (the oxidizer vendor) indicates that SIA cannot modify the existing control equipment to handle additional air flow volume or pollutant loading beyond design values. If additional air flow or pollutant loading beyond design values is required, new equipment with larger capacity is the only solution. Thus, retrofitting the existing VOC incinerator with additional air flow capacity to address air flows from the spray application zones and the heated flash zone is not feasible.

Another potential retrofit option - is the inclusion of a Carbon Concentrator to concentrate the VOCs from booth exhaust and then direct a smaller exhaust gas stream of concentrated VOC emissions to the existing Catalytic Incinerator. This type of system is technically feasible and at a 10 to 1 ratio then send the concentrated VOC stream to the existing oxidizer (i.e., approximately 1,700 scfm) which would fit into the remaining capacity of the existing incinerator. From a review of the exhaust gas flow rates associated with the basecoat and clearcoat spray zones, the large volume of air from these spray zones would require a concentrator with a much greater concentration ratio of greater than 60 to 1. This would add substantial cost to the concentrator, plus the volume of carbon to be utilized. Table Case 3B –Table Case 3D provide an economic analysis of utilizing a carbon concentrator and new oxidizer system to control various VOC exhaust gas streams from Topcoat #3. Adjusting the capital and annual operating cost to remove the cost for an oxidizer would affect the overall total annualized cost. A reduction of between 15 and 20% is anticipated to occur, thus using a reduction of 20% in the annualized capital cost would result in a cost effectiveness of between $12,500 and $26,500 per ton of VOC removed, which is considered cost excessive.

In addition to the excessive economic cost stated above, installation of a concentrator system would require space within the paint shop building which is not currently available. In addition, ducting work would have to be fabricated and installed, which would involve additional cost and space.

Conclusion: Based upon the information provided above, retrofitting of the existing Twotone coating system oven oxidizer to add capability to control booth VOC emissions is not technically and economically feasible.

Energy Impact of VOC Control Alternatives

Incorporation of a Rotary Concentrator with Incineration System, RTO or Catalytic Incineration System to control the VOC emissions from the Twotone and Repair Booth/Topcoat Line 3 will require the increased usage of natural gas, as well as electricity.

Environmental Impact of VOC Control Alternatives

Incorporation of a Rotary Concentrator with Incineration System, RTO or Catalytic Incineration System to control VOC emissions from the Twotone and Repair Booth/Topcoat Line 3 will require the increased usage of natural gas, which will result in combustion related air pollutant emissions from the assembly plant. Likewise the increased usage of natural gas to support a Rotary Concentrator with Incineration System, RTO or Catalytic Incineration systems would result in additional emissions of greenhouse gas emissions (GHG), which is regulated under EPA’s Tailoring rule and Mandatory Greenhouse Gas Reporting rule.

Incorporation of the catalytic oxidation system to control the VOC emissions from the Twotone and Repair Booth/Topcoat Line 3 will require the periodic replacement and disposal of the spent catalyst which represents an additional environment.

STEP 5 – SELECT BACT

The following Table presents a summary of recent BACT evaluations for Twotone and Repair Booth/Topcoat Line 3 obtained from USEPA’s RACT/BACT/LAER Clearinghouse (RBLC:

Twotone and Repair Booth/Topcoat Line 3				
Date of Permit	**Facility**	**Location**	**Description**	**VOC BACT**
Proposed BACT:	Subaru of Indiana Automotive	Lafayette, IN	Auto and Light Duty Truck Mfg	**BACT:** Twotone and Repair Booth/Topcoat #3 only = 10.6 lbs/gacs, based upon a daily volume weighted average, curing oven controlled by a catalytic incinerator with destruction efficiency of 90%.
Current BACT:				**BACT:** Combined daily vol. weighted from Topcoat Booths 1 and 2, Twotone and Repair Booth = 12.3 lb/gacs, curing oven controlled by a catalytic incinerator with destruction efficiency of 90% and overall efficiency for the twotone and repair system at 18%
4/2/01	Nissan North America, Inc.	Canton, MS	Auto and Light Duty Truck Mfg - Systems 1 and 2	**BACT for VOCs:** Use of waterborne basecoat and solvent borne clearcoat, with the topcoat oven exhaust and emissions from the automatic zones on clearcoat routed thru RTO with destruction efficiency 95% **NSPS:** VOC - 12.27 lbs VOC/gacs, **BACT** - 5.2 lb VOC/gacs
10/1/02	Honda Manufacturing of Alabama, LLC	Lincoln, AL	Motor Vehicle Assembly Plant	Basecoat - water base coatings. Cut-ins: Manual conventional exterior, HVLP exterior and robotic ES bell applicators. 5.20 lb/gal acs, 4 lb VOC/gal. Top coat ovens and clearcoat automatic zones: Incinerator w/ 95% efficiency,
5/7/2002	Lansing Craft Centre - NAVO GM Corp	Lansing, MI	Automobile and light duty truck assembly plant	**BACT:** 6.60 lbs VOC/gacs. Auto Clearcoat - RTO #5, Curing Oven - RTO #4. Basecoat materials are waterborne.
8/29/2002	General Motors Corporation - Delta Township, Michigan	Delta Township, MI (I-69 and Davis Rd.	Motor Vehicle Assembly Plant	**BACT:** - 5.42 lbs VOC/gacs. Automatic clearcoat booth section of the topcoat system controlled by carbon absorption unit followed in series by RTO #2 (95% efficiency). Basecoat heated flash-off areas and topcoat curing ovens - RTO #1 (95% efficiency).
4/1/2002	BMW Manufacturing Corporation	Spartanburg, SC	Motor Vehicle Assembly Plant	**NSPS:** 12.25 lb/gallon acs, natural gas combustion for combustion sources
Oct-02	Hyundai Motor Manufacturing Alabama	Montgomery, Alabama	Motor Vehicle Assembly Plant	**Basecoat BACT:** water based coatings, Curtains: Robotic HVLP, Exterior: Robotic Electrostatic Turbo Bell Applicators. **Clearcoat BACT:** Curtains: Robotic Electrostatic, Exterior: Robotic Electrostatic Bell Applicators, 5.20 lb/gal acs, **Topcoat:** 1.60 lb/gal max., **Clearcoat:** 3.90 lb/gal max. **Thinner:** 8.20 lb/gal max **Ovens:** 95% control incinerator and natural gas only
1/14/2003	GM Moraine	Montgomery County, Ohio	Motor Vehicle Assembly Plant	8.24 lb/gacs. Robot clearcoat, bell areas and clearcoat bake ovens controlled. Carbon ad. With thermal incinerator with 85.5% destruction/removal efficiency

Twotone and Repair Booth/Topcoat Line 3				
Date of Permit	**Facility**	**Location**	**Description**	**VOC BACT**
6/21/2004	Toyota Motor Manufacturing Texas	San Antonio, Texas	Motor Vehicle Assembly Plant	5.2 lb/gacs Topcoat alone. Combined primer surfacer/topcoat limit of 4.6 lbs VOC/gacs. Control of clearcoat auto spray zones with 86% overall efficiency. Control of topcoat ovens with 95% destruction/removal efficiency
9/2/2004	Daimler Chrysler	Lucas County, Ohio	Motor Vehicle Assembly Plant	5.42 lbs/gacs and oven and auto zone clearcoat control with 95% destruction/removal efficiency
6/7/2005	Volvo Trucks North America	Dublin County, Virginia	Truck Painting and Coating Operations	
10/19/2006	Honda Manufacturing	Greensburg, Indiana	Motor Vehicle Assembly Plant	5.2 lb/gacs, based upon a daily volume weighted average. Waterborne basecoat coatings. Clearcoat booths and topcoat oven controlled by a separate RTOs each with 95% destruction/removal efficiency
7/27/2007 (Draft)	KIA Motors Manufacturing Georgia	West Point, Georigia	Motor Vehicle Assembly Plant	2.92 lb/gal applied solid guidecoat/surfacer (monthly average) 5.2 lb/gal applied solid topcoat (base/clear avg), monthly average. RTO on guidecoat oven and clearcoat booths. RTO is not directly connected to basecoat booths

The RBLC entrees shown in the above table have a range of BACT VOC limits for topcoat lines from 5.2 to 12.25 lb VOC/gacs. The determinations established generally represent BACT for topcoat systems only. However, the Toyota Motor Manufacturing Texas plant in San Antonio, Texas has a BACT limitation of 4.6 lbs VOC/gacs for the combined topcoat/primer surfacer system. However, this BACT limitation is based upon a much larger production volume than the 54,000 vehicles/year proposed for the Topcoat #3 system. The rest of the companies in the above table control the automatic clearcoat booth and the curing oven meeting the most stringent BACT limit of 5.2 lb/gacs.

Subaru's current BACT limit was established in PSD (79) 1651, issued on July 30, 1987, revised on July 26, 1989, with no control on the topcoat booths (clearcoat and basecoat system). However, the Curing Oven is controlled by a Catalytic Incineration with a combined (Topcoat Booths 1, 2 and 3) VOC BACT limit of 12.3 lb/gacs. Material change is not an option because it will compromise the quality standards (appearance and durability) or product specifications set for the vehicles.

Based upon the cost analysis, it is cost prohibitive to retrofit the existing catalytic incinerator or adding a new VOC control device to control the topcoat booth 3 in order to meet the most stringent BACT limit established. However, since the Topcoat #3 Curing Oven is already controlled by a Catalytic Incinerator, SIA shall be required to continue controlling the Twotone and Repair Booth/Topcoat #3 Curing Oven emissions.

Conclusion: Since the most stringent BACT is 5.2 lb/gacs using an RTO with destruction efficiency of 95% the Twotone and Repair Booth/Topcoat Line #3 from SIA will likewise be required to meet its current destruction efficiency of 90%. Therefore the PSD BACT for the Twotone and Repair Booth/Topcoat Line 3 has been determined to be the following:

(a) The VOC emissions from the Twotone and Repair Booth/Topcoat #3 Booth's Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent.

(b) The daily volume weighted average VOC emissions from the entire system, Twotone and Repair Booth/Topcoat #3 Booth and Curing Oven shall be limited to 10.6 lbs VOC/gallon applied coating solids.

(c) The basecoat and clearcoat booths shall use the most technologically advanced, commercially available coating systems, use of lower VOC content materials like waterborne basecoats, high solid solvent borne clearcoat coatings and high transfer efficiency applicators where feasible to minimize VOC emissions from these operations;

(d) Good operating practices to minimize the formation of VOC emissions through minimization of spillage of coating materials, minimization of major paint repairs.
The calculated VOC emission rate expressed in lbs VOC per gallon applied coating solids is determined as follows:

VOC and solid contents worst case basecoat and clearcoat material:

- VOC content waterborne basecoat: 1.36 lbs/gallon
- VOC content solventborne clearcoat: 4.12 lbs/gallon
- Solid content by volume waterborne basecoat: 20.9%
- Solid content by volume solventborne clearcoat: 42.4%
- Transfer efficiency (system average): 68%
- Overall system control efficiency (20% carryover, 90% destruction): 18%

Calculation:
Weighted VOC content:
1.36 lbs/gallon (0.45 usage rate) = 0.612
4.12 lbs/gallon (0.55 usage rate) = 2.266
0.612 + 2.266 = 2.88 lbs VOC/gallon weighted
Weighted Solid content:
20.9% X 0.45 = 9.4
42.4% X 0.55 = 23.3
9.4 + 23.3 = 32.72% volume solids weighted
(2.88 lbs VOC/gallon divided by (0.3272 X 68%)) X (1 – 0.18) = 10.6 lbs VOC/gacs

TRIM LINE VOC BACT ANALYSIS

The VOC sources in the Trim Line consist mainly of sealer and adhesive application. The total annual VOC emissions from this process are 17.4 tons per year.

Steps 1 and 2 – Identification and Elimination of Technically Feasible Control Technologies
The VOC sources in the Trim Line consist mainly of sealer and adhesive application with a majority of the emission sources being classified as fugitive in nature. The application of adhesives and sealers typically occurs in the open assembly area where there are no standard enclosures. Because of the location of these operations on the trim line (open areas) it is not technically feasible to enclose these areas for capturing VOC exhaust for routing to an oxidation device or other similar type VOC control device. The adhesive materials used in window installation are explicitly specified by transportation standards for vehicle window installations.

Step 3 – Rank Remaining Control Technologies
As shown in Steps 1 and 2, due to the fugitive nature of the Trim Line's adhesive and sealer operations, the only remaining viable control technologies for VOC emissions are best management practices and the use of low VOC materials where possible in order to meet vehicle safety standards.

Step 4 and Step 5– Evaluate Most Effective Control and Select BACT
The following Table presents a summary of recent BACT determinations for Trim Line's adhesive and sealer operations obtained from USEPA's RACT/BACT/LAER Clearinghouse (RBLC):

Facility/ RBLC ID	State	Permit Date	Basis	Process	VOC BACT Limit	Controls
Proposed BACT: Subaru of Indiana Automotive	IN	Proposed	BACT - PSD	Adhesive Application	**Window installation** materials = 0.40 lb/gal as applied monthly vol weighted ave. **Trim Line Adhesives excluding window installation** materials = 0.30 lb/gal as applied; monthly vol. weighted ave.	No Controls
Current BACT: Subaru of Indiana Automotive		None				
Honda Manufacturing of Indiana, LLC	IN	10/19/2006	BACT- PSD	Misc Operations	**Assembly install glass** - 0.40 lb/gal monthly volume weighted average of all window install materials (application of glass adhesion body primer; window primers; glass adhesive) 24.78 tons/yr as calculated **Weld Sealer –** 0.30 lb/gal monthly volume weighted average 3.91 ton/yr VOC emissions	No controls
General Motors Corporation, Moraine Assembly Plant OH-0295	OH	01/14/2003	BACT-PSD	Sealer and Adhesive Application	17 lb/hr	No controls
Honda Manufacturing of Alabama, LLC	AL	10/18/02	BACT -PSD	Sealer and Adhesive Application	0.30 lb/gal as applied (monthly volume weighted average)	Low VOC materials. No controls
GM-Delta Township - Eaton Co., MI	MI	9/26/01	BACT-PSD	Sealer and Adhesive application	0.30 lb/gacs: Sealers/adhesives (monthly volume weighted average) Standard Limit: 0.30 lb/gal	Good housekeeping practices

As shown all sources in the above table do not have a control device to control VOC emissions from the sealer and adhesive application. SIA is proposing a PSD BACT that is consistent with the most stringent BACT in the table.

Conclusion: Based upon the above analysis, the PSD BACT for the Trim Line, identified as Unit 010 has been determined to be the following:

(a) The monthly volume weighted average of the VOC content of the adhesives and other materials used in the Trim Line, Unit 010 for window installation shall not exceed 0.40 pounds of VOC per gallon of coating, as applied.

(b) The monthly volume weighted average of the VOC content of the adhesives and sealers used in the Trim Line, Unit 010 excluding window installation materials shall not exceed 0.30 pounds of VOC per gallon of coating, as applied.

THREE NEW PROCESS HEATERS FOR THE HEATED FLASH ZONES IN MODIFIED TOPCOAT #3 AND PLASTIC BUMPER SYSTEM

Three (3) natural gas fired heaters each rated at 2.5 MMBtu/hr are proposed to provide additional curing to the Twotone Coating Line (i.e., conversion to waterborne basecoat and solventborne clearcoat) and Plastic Bumper System (conversion to waterborne primer and waterborne basecoat). Note: No BACT analysis was made for the Plastic Bumper System because its modification did not result in an emissions increase.

Steps 1, 2 and 3 – Identification, Elimination and Ranking of Remaining Control Technologies by Control Effectiveness

VOC emissions will be emitted from the process heaters as a by-product of incomplete or inefficient combustion. These VOC's may be comprised of a wide spectrum of volatile and semi-volatile organic compounds. They are emitted to the atmosphere when some of the fuel remains unburned or partially burned during combustion. In the case of natural gas fuel, some of the organics are carryover, unreacted; trace constituents of the gas while others may be pyrolysis products of the heavier hydrocarbon constituents. The following was the only control technology identified and evaluated to control VOC from small process heaters (less than 10 MMBtu/hr):

(a) **Good Combustion** - VOC emissions from the combustion facilities primarily result from combustion by-product of the fuel. The basic premise of good combustion technology involves premixing the fuel and air prior to entering the combustion zone, which provides for a uniform fuel/air mixture and prevents local hotspots in the combustor, thereby reducing NO_x emissions. However, the residence time of the combustion gases in these lean premixed combustors must be increased to ensure complete combustion of the fuel to minimize VOC emissions. The RACT/BACT/LAER Clearinghouse database does not show small process heaters (<10 MMBtu/hr) with any add-on control device to control VOC emissions. It only identified "good combustion" as the only control technology that has been applied for the control of VOC emissions.

Step 4 – Evaluate the Most Effective Controls and Document Results

The only technically feasible control option for the process heaters is "good combustion control".

Combustion control is accomplished primarily through the process heaters design and operation. Combustion efficiency is often related to the three (3) "T's" of combustion: Time, Temperature and Turbulence. These components of combustion efficiency are designed into the process heaters to maximize fuel efficiency and reduce operating costs.

Good combustion generally requires the following:

(a) High temperature;

(b) Good Air/Fuel Mixing;

(c) Sufficient Excess Air; and

(d) Sufficient Residence Time.

Step 5 – Select BACT

The table below provides a summary of recent BACT determinations, as well as emission limitations being proposed by SIA for the three (3) new natural gas fired process heaters associated with the proposed expansion project.

Facility/ RBLC ID	State	Permit Date	Basis	Heat Input (MMBtu/hr)	VOC BACT Limit	Controls
Proposed BACT: Subaru of Indiana Automotive, LLC	IN	Proposed	BACT-PSD	Natural gas-fired flash zone heaters	0.0055 lb/MMBtu	Combustion of natural gas only and good combustion practices
MGM Mirage NV-0050	NV	11/30/2009	Case-by-case	Natural gas fired water heater – 2 MMBtu/hr	0.0054 lbs/MMBtu	Combustion of natural gas only and good combustion practices
Competitive Power Ventures, Inc MD-0040	MD	11/12/2009	LAER`	Natural gas fired heater – 1.7 MMBtu/hr	0.0055 lb/MMBtu	No controls feasible
Competitive Power Ventures, Inc/CPV Maryland, LLC MD-0040	MD	11/12/2008	LAER for VOC	Natural gas Heater – 1.70 MMBtu/hr	0.0050 lb/MMBtu	Exclusive combustion of natural gas with sulfur content < 2.0 gr/100 SCF No add-on controls
Dominion Cove Point, LNG, L.P. MD-0035	MD	8/12/2005	BACT-PSD	Natural gas fired emergency vent heater- 1.3 MMBtu/hr	0.0054 lb/MMBtu	Combustion of natural gas only and good combustion practices
Wisconsin Public Service –Weston Plant WI-0228	WI	10/19/2004	BACT-PSD	Natural gas fired heater- 0.75 MMBtu/hr	0.0040 lb/hr	Combustion of natural gas

All of the sources in the above table use natural gas for fuel with the corresponding emission factor of 5.5 pound per million cubic feet (lb/MMCF) as the VOC emission limit. However, in converting this lb/MMCF VOC limit into lb/MMBtu each company used different heating value (Note: the gross heating value of natural gas is 1,150 MMBtu/MMCF and net heating value of 1,050 MMBtu/MMCF), which resulted in VOC BACT limits ranging from 0.005 lb/MMBtu to 0.0055 lb/MMBtu.

Conclusion: Based upon the above analysis, the PSD BACT for the three (3) process heaters has been determined to be the following:

(a) The VOC emission from the three (3) process heaters shall not exceed 0.0055 pound per million British thermal units (lb/MMBtu).

(b) The Permittee shall perform good combustion practices for the three (3) process heaters.

(c) Each of the three (3) 2.5 MMBtu/hr process heater shall burn natural gas only as fuel.

Plantwide VOC BACT

The following table presents a summary of recent BACT determinations for the entire source (Automobile and Light Duty Truck Manufacturing obtained from USEPA's RACT/BACT/LAER Clearinghouse (RBLC:

Facility/ RBLC ID	State	Permit Date	Basis	VOC BACT Limit	VOC Controls
Subaru of Indiana Automotive, LLC	IN	Proposed BACT	BACT-PSD	Production Limit = 310,000 vehicles /yr VOC Emissions Limit = 1,084.9 tons/12 consecutive month period	Incinerators-Individual operations
		Current BACT	BACT-PSD	Production Limit = 262,000 vehicles/yr VOC Emissions Limit = 1,087 tons/12 consecutive month period	Incinerators-Individual operations
Honda Manufacturing of Indiana, LLC	IN	10/19/2006	BACT-PSD	Production Limit = 250,000 vehicles /yr VOC Emissions Limit = 330.2 tons/12 consecutive month period	Incinerators-Individual operations
Toyota Motor Manufacturing	IN	8/9/1996	BACT-PSD	Production Limit = 450,000 vehicles /yr VOC Emissions Limit = 3,309 tons/12 consecutive month period	Incinerators-Individual operations

As shown in the above table production rates and sourcewide VOC emissions have been established as BACT for similar sources in addition to BACT for individual operations in the automobile and truck manufacturing.

Conclusion: Based upon the above analysis, SIA will continue to have PSD BACT for the entire source, which is determined to be the following:

SUMMARY OF BACT DETERMINATIONS	
EMISSIONS SOURCE	**BACT DESCRIPTION**
SECTION D.1 Sourcewide	The VOC emissions from the entire source shall not exceed 1,084.8 tons per twelve consecutive month period with compliance at the end of each month The source shall not produce greater than 310,000 vehicles per twelve (12) consecutive month period with compliance determined at the end of each month.
SECTION D.4: Unit 001- Electrodeposition Coating of Vehicle Bodies (ED Coating System)	The VOC emissions from the ED Curing Oven shall be vented to the existing Catalytic Incinerator with a VOC destruction efficiency of 90 percent, and a minimum overall control efficiency (capture efficiency x destruction efficiency) for the entire ED Coating Line (ED Dip/Rinse Tanks and Curing Oven) of 63%. The daily VOC emissions from the ED Coating Line (ED Dip/Rinse Tanks and Curing Oven) shall be limited to 0.4 pound per gallon of applied coating solids (lb/gacs).
SECTION D.6: Unit 002 – Sealing and PVC Undercoating Line	• 0.30 lb gacs, based upon a daily volume weighted average • Use of low VOC materials when technically feasible, and • Good operating/work practices.

SUMMARY OF BACT DETERMINATIONS	
EMISSIONS SOURCE	**BACT DESCRIPTION**
SECTION D.4: Unit 003 - Topcoat Coating System (Topcoat Line 3 only)	• 10.6 lbs of VOC/gallon applied coating solids, based upon a daily volume weighted average • Use of waterborne basecoat materials and solventborne clearcoat materials, and • 90% control of system oven (existing catalytic oxidizer).
SECTION D.7: Unit 010 - Trim Line	The monthly volume weighted average of the VOC content of the adhesives and other materials used in the Trim Line, unit 010 for window installation shall not exceed 0.40 pounds of VOC per gallon of coating, as applied. The monthly volume weighted average of the VOC content of the adhesives and sealers used in the Trim Line, unit 010 excluding window installation materials shall not exceed 0.30 pounds of VOC per gallon of coating, as applied.
SECTION D.4: Three (3) Process Heaters for Heated Flash Zones for the Topcoat #3 and Plastic Bumper System	• VOC limit of 0.0055 lb/MMBtu, • Use of Natural gas only as fuel and • Good combustion practices.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Denise Coogan
Subaru of Indiana
POB 5689
Lafayette, IN 47903

DATE: December 22, 2010

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
SSM
157-29566-00050

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:
Thomas Easterday, Responsible Official
Steven Frey, Associate, Malcolm Pirnie, Inc
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.

Final Applicant Cover letter.dot 11/30/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

December 22, 2010

TO: Tippecanoe County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Subaru of Indiana
Permit Number: 157-29566-00050

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 11/30/07

Mail Code 61-53

IDEM Staff	DPABST 12/22/2010 Subaru of Indiana Automotive, Inc. (SIA) 157-29566-00050 (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		Denise Coogan Subaru of Indiana Automotive, Inc. (SIA) PO Box 5689 Lafayette IN 47903 (Source CAATS) (CONFIRM DELIVERY)									
2		Thomas Easterday Sr VP Subaru of Indiana Automotive, Inc. (SIA) PO Box 5689 Lafayette IN 47903 *(RO CAATS)*									
3		Mr. Charles L. Berger Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 *(Affected Party)*									
4		Tippecanoe County Commissioners 20 N 3rd St, County Office Building Lafayette IN 47901 *(Local Official)*									
5		Tippecanoe County Health Department 20 N. 3rd St Lafayette IN 47901-1211 *(Health Department)*									
6		Lafayette City Council and Mayors Office 20 North 6th Street Lafayette IN 47901-1411 *(Local Official)*									
7		Tippecanoe County Public Library 627 South Street Lafayette IN 47901-1470 *(Library)*									
8		Ms. Sharon McKnight 909 Southernview Drive North Lafayette IN 47909 *(Affected Party)*									
9		Ms. Dorothy Whicker 2700 Bonny Lane Lafayette IN 47904 *(Affected Party)*									
10		Ms. Geneva Werner 3212 Longlois Drive Lafayette IN 47904-1718 *(Affected Party)*									
11		Mrs. Phyllis Owens 3600 Cypress Lane Lafayette IN 47905 *(Affected Party)*									
12		Mr. Jerry White 1901 King Eider Ct West Lafayette IN 47906 *(Affected Party)*									
13		Ms. Rose Filley 5839 Lookout Drive West Lafayette IN 47906 (Affected Party)									
14		Mr. William Cramer 128 Seminole Drive West Lafayette IN 47906 *(Affected Party)*									
15		Mr. Robert Kelley 2555 S 30th Street Lafayette IN 44909 *(Affected Party)*									

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

FACSIMILIE OF PS Form 3877

Mail Code 61-53

IDEM Staff	DPABST 12/22/2010 Subaru of Indiana Automotive, Inc. (SIA) 157-29566-00050 (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		Steven Associate Malcolm Pirnie, Inc 1515 East Woodfield Road Suite 360 Schaumburg IL 60173 (Consultant)									
2		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)*									
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

FACSIMILIE OF PS Form 3877