



# 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](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: October 16, 2009

RE: Rolls - Royce Corporation / 063-28443-00063

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

## Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days 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  
FN-REGIS.dot 1/2/08



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## REGISTRATION OFFICE OF AIR QUALITY

**Rolls-Royce Corporation**  
758 Columbia Road  
Plainfield, IN 46168

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 063-28443-00063	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date:  October 16, 2009

## SECTION A

## SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

### A.1 General Information

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The Registrant owns and operates a stationary engine assembly plant, located at.

Source Address:	758 Columbia Road, Plainfield, IN 46168
Mailing Address:	2355 S. Tibbs Avenue (N-23), Indianapolis, Indiana 46241
General Source Phone Number:	(317) 230-3591
SIC Code:	3724
County Location:	Hendricks County
Source Location Status:	Nonattainment for PM <sub>2.5</sub> standard Attainment for all other criteria pollutants
Source Status:	Registration

### A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) spray cleaning booth, identified as IPA SB, approved for construction in 2009, with a maximum capacity of one (1) engine assembly per day, applying six (6) gallons of solvent (IPA) per assembly, using no emission controls, and exhausting to stack S-1.
- (b) One (1) spray cleaning booth, identified as MS SB, approved for construction in 2009, with a maximum capacity of three (3) engine assemblies per day, applying one (1) gallon of solvent (mineral spirits) per assembly, using no emission controls, and exhausting to general ventilation.
- (c) One (1) covered cold cleaner dip tank, identified as MS CC, approved for construction in 2009, using a non-HAP solvent (mineral spirits), using no emission controls, and exhausting to general ventilation.
- (d) Natural gas-fired space heaters, identified as Heaters, approved for construction in 2009, with a combined heat input capacity of 1.42 million British thermal units per hour (MMBtu/hr), using no emission controls, and exhausting to general ventilation.

## SECTION B

## GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-1.1-1]

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Terms in this registration 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 2-1.1-1) shall prevail.

### B.2 Effective Date of Registration [IC 13-15-5-3]

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Pursuant to IC 13-15-5-3, this registration 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.

### B.3 Registration Revocation [326 IAC 2-1.1-9]

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Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

### B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

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- (a) All terms and conditions of permits established prior to Registration No. 063-28443-00063 and issued pursuant to permitting programs approved into the state implementation plan have been either:
  - (1) incorporated as originally stated,
  - (2) revised, or
  - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

### B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

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Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 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, IN 46204-2251

- (c) The notification 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.

**B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]**

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Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

**B.7 Registrations [326 IAC 2-5.1-2(i)]**

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Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

**SECTION C**

**SOURCE OPERATION CONDITIONS**

Entire Source

**Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]**

**C.1 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 registration:

- (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.2 Fugitive Dust Emissions [326 IAC 6-4]**

The Registrant 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).

## SECTION D.1

## OPERATION CONDITIONS

### Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) spray cleaning booth, identified as IPA SB, approved for construction in 2009, with a maximum capacity of one (1) engine assembly per day, applying six (6) gallons of solvent (IPA) per assembly, using no emission controls, and exhausting to stack S-1
- (b) One (1) spray cleaning booth, identified as MS SB, approved for construction in 2009, with a maximum capacity of three (3) engine assemblies per day, applying one (1) gallon of solvent (mineral spirits) per assembly, using no emission controls, and exhausting to general ventilation.
- (c) One (1) covered cold cleaner dip tank, identified as MS CC, approved for construction in 2009, using a non-HAP solvent (mineral spirits), using no emission controls, and exhausting to general ventilation.

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

### Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

#### D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operation), for the cold cleaning operations, identified as MS CC, MS IPA, and MS SB, constructed after January 1, 1980, the Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements; and
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

#### D.1.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs, identified as MS CC, MS IPA, and MS SB, constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
  - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));

- (B) The solvent is agitated; or
  - (C) The solvent is heated.
- (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
  - (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
  - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
  - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
    - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
    - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
    - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the Permittee shall ensure that the following operating requirements for the cold cleaners, identified as MS CC, MS IPA, and MS SB are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
  - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
  - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	Rolls-Royce Corporation
<b>Mailing Address:</b>	2355 S. Tibbs Avenue (N-23)
<b>City:</b>	Indianapolis, Indiana 4624
<b>Phone Number:</b>	(317) 230-3591
<b>Registration No.:</b>	063-28443-00063

I hereby certify that Rolls-Royce Corporation is :

still in operation.

I hereby certify that Rolls-Royce Corporation is :

no longer in operation.

in compliance with the requirements of Registration No. 063-28443-00063.

not in compliance with the requirements of Registration No. 063-28443-00063.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Phone Number:</b>
<b>Date:</b>

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance:</b>

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for a Registration

#### Source Description and Location

<b>Source Name:</b>	<b>Rolls-Royce Corporation</b>
<b>Source Location:</b>	<b>758 Columbia Road, Plainfield, IN 46168</b>
<b>County:</b>	<b>Hendricks</b>
<b>SIC Code:</b>	<b>3724</b>
<b>Registration No.:</b>	<b>063-28443-00063</b>
<b>Permit Reviewer:</b>	<b>Sandra Carr</b>

On September 9, 2009, the Office of Air Quality (OAQ) received an application from Rolls-Royce Corporation related to the construction and operation of a new stationary engine assembly plant. This plant adds a fan assembly to an engine.

#### Existing Approvals

There have been no previous approvals issued to this source.

#### County Attainment Status

The source is located in Hendricks County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Attainment effective October 19, 2007, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.

<sup>1</sup>Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for PM<sub>2.5</sub>.

*(Air Pollution Control Board; 326 IAC 1-4-33; filed Dec 26, 2007, 1:43 p.m.: 20080123-IR-326070308FRA; filed May 14, 2008, 2:36 p.m.: 20080611-IR-326070840FRA)*

(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. Hendricks 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) **PM<sub>2.5</sub>**

U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Hendricks County as nonattainment for PM<sub>2.5</sub>. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air

Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM<sub>2.5</sub> promulgated on May 8, 2008, and effective on July 15, 2008. Therefore, direct PM<sub>2.5</sub> and SO<sub>2</sub> emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

- (c) Other Criteria Pollutants  
Hendricks County has been classified as attainment or unclassifiable in Indiana for PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and CO. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

#### **Fugitive Emissions**

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

#### **Background and Description of Emission Units and Pollution Control Equipment**

The Office of Air Quality (OAQ) has reviewed an application, submitted by Rolls-Royce Corporation on September 9, 2009, relating to the construction of a new stationary engine assembly plant located at 758 Columbia Road, Plainfield, IN 46168.

The following is a list of the new emission units and pollution control devices:

- (a) One (1) spray cleaning booth, identified as IPA SB, approved for construction in 2009, with a maximum capacity of one (1) engine assembly per day, applying six (6) gallons of solvent (IPA) per assembly, using no emission controls, and exhausting to stack S-1
- (b) One (1) spray cleaning booth, identified as MS SB, approved for construction in 2009, with a maximum capacity of three (3) engine assemblies per day, applying one (1) gallon of solvent (mineral spirits) per assembly, using no emission controls, and exhausting to general ventilation.
- (c) One (1) covered cold cleaner dip tank, identified as MS CC, approved for construction in 2009, using a non-HAP solvent (mineral spirits), using no emission controls, and exhausting to general ventilation.
- (d) Natural gas-fired space heaters, identified as Heaters, approved for construction in 2009, with a combined heat input capacity of 1.42 million British thermal units per hour (MMBtu/hr), using no emission controls, and exhausting to general ventilation.

#### **Enforcement Issues**

There are no pending enforcement actions related to this source.

#### **Emission Calculations**

See Appendix A of this TSD for detailed emission calculations.

#### **Permit Level Determination – Registration**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Emission Unit ID	Potential To Emit of the Entire Source (tons/year)								
	PM	PM <sub>10</sub> *	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	VOC	CO	Total HAP	Worst Single HAP
Spray Cleaning Booth (IPA SB)	0.002	0.002	0.002	negl.	negl.	6.49	negl.	negl.	negl.
Spray Cleaning Booth (MS SB)	0.001	0.001	0.001	negl.	negl.	3.37	negl.	negl.	negl.
Cold Cleaner (MS CC)	negl.	negl.	negl.	negl.	negl.	3.15	negl.	negl.	negl.
Combustion (N.G. Heaters)	0.01	0.05	0.05	0.004	0.61	0.03	0.51	0.01	0.01 (Hexane)
<b>Total PTE of Entire Source</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>0.004</b>	<b>0.61</b>	<b>13.05</b>	<b>0.51</b>	<b>0.01</b>	<b>negl.</b>
Registration Levels	25	25	25	25	25	25	100	25	10

negl. = negligible  
 \* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), not particulate matter (PM), is considered as a "regulated air pollutant".

Criteria Pollutants

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of all regulated criteria pollutants are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2 (Registrations). A Registration will be issued.

Hazardous Air Pollutants

- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAP is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

**Federal Rule Applicability Determination**

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Stationary Gas Turbines, 40 CFR 60.330, Subpart GG (326 IAC 12), are not included in the permit, since this plant, which only adds a fan to an turbine engine assembly and does not test the engine, is not subject to the requirements of 40 CFR Part 60.330, Subpart GG.
- (b) The requirements of the New Source Performance Standard for Stationary Combustion Turbines, 40 CFR 60.4300, Subpart KKKK (326 IAC 12), are not included in the permit, since this plant, which only adds a fan to an turbine engine assembly and does not test the engine, is not subject to the requirements of 40 CFR Part 60.330, Subpart KKKK.
- (c) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Halogenated Solvent Cleaning, 40 CFR 63.460, Subpart T (326 IAC 20-6), are not included in the permit, since the cold solvent cleaners, identified as MS CC, MS IPA, and MS SB, do not use any

solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform, or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. This source uses only mineral spirits (MS) and isopropyl alcohol (IPA) to clean the engines. Both of these substances are volatile but are not HAP.

- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR 63.3880, Subpart Mmmm (326 IAC 20-80), are not included in the permit, since the plant is not a major source of HAP.
- (f) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR 63.11169 Subpart HHHHHH, are not included in the permit, since the source does not spray apply any coatings containing 0.1 percent or more by mass of chromium (Cr), lead (Pb), nickel (Ni), or cadmium (Cd) or 1.0 percent or more by mass of manganese (Mn) and the spray cleaning booths IPA SB & MS SB spray-apply only isopropyl alcohol (IPA) and mineral spirits (MS), respectively, to remove oil and grease from the turbine engines. Therefore, at this source, the spray cleaning booths, identified as IPA SB and MS SB, are not subject to the requirements of subpart HHHHHH.

Pursuant to 63.11180 and for the purposes of this subpart, spray-applied coatings do not include the following materials or activities:

"Surface coating application using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology, including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, or marking pens."

Therefore, the cold cleaner dip tank, identified as MS CC, is not subject to the requirements of subpart HHHHHH because it is specifically exempted as a non-atomizing application technology.

- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

#### Compliance Assurance Monitoring (CAM)

- (h) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

<b>State Rule Applicability Determination</b>
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The following state rules have been evaluated for applicability to this source:

- (a) 326 IAC 2-5.1-2 (Registrations)  
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAP is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte

County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

- (d) 326 IAC 5-1 (Opacity Limitations)  
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:
- (1) 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.
  - (2) 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.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)  
The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.
- (g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)  
No emission unit at this source is subject to the requirements of 326 IAC 8-1-6, because the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year. Therefore, 326 IAC 8-1-6 does not apply to the mineral spirit spray cleaning booth (MS SB), the IPA spray cleaning booth (IPA SB), or the cold cleaner dip tank (MS CC).

#### Spray Cleaning Operations

- (h) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
326 IAC 6-3 applies to manufacturing processes that have a potential to emit particulate emissions; are not listed as specifically exempt under 326 IAC 6-3-1(b); and are not regulated by another state rule listed under 326 IAC 6-3-1(c).
- (1) The spray cleaning booth (MS SB) uses less than 5 gallons of mineral spirits per day which is specifically exempted under 326 IAC 6-3-1(b)(6). Therefore, the requirements of 326 IAC 6-3-2 do not apply to the spray cleaning booth MS SB.
  - (2) Pursuant to 326 IAC 6-3, a *manufacturing process* is defined in the rule as:  
"...any single or series of actions, operations, or treatments in which a mechanical, physical, or chemical transformation of material occurs that emits, or has the potential to emit, particulate in the production of the product. The term includes transference, conveyance, or repair of a product."  
  
Since the spray cleaning booth (IPA SB), in which IPA is sprayed on an engine assembly in order to remove oil or grease, does not meet the definition of a manufacturing process, the requirements of 326 IAC 6-3 shall not apply to IPA SB.
- (i) 326 IAC 8-2-9 (Miscellaneous Metal Coating)  
This rule applies to facilities, construction of which commences after July 1, 1990, located in any county, and which have potential VOC emissions greater than twenty-five (25) tons per year.

Although this source was constructed in 2009, applies organic cleaners to metal parts, and operates under the SIC Code #37, the potential VOC emissions are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-2-9 do not apply.

- (i) 326 IAC 8-3-1 (Organic Solvent Degreasing Operations)  
Pursuant to 326 IAC 8-3-1 (Organic Solvent Degreasing Operations), the spray cleaning booths, identified as IPA SB and MS SB, are subject to the requirements of 326 IAC 8-3-2 (Cold Cleaner Operations) and 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control), since these units meet the definition of a cold cleaner degreaser under 326 IAC 1-2-18.5, utilize an organic solvent containing volatile organic compounds (VOC) (as defined by 326 IAC 1-2-90), were constructed after the July 1, 1990, and do not have a remote solvent reservoirs.
- (k) 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)  
Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), the spray cleaning booths, identified as IPA SB and MS SB, are not subject to the requirements of 326 IAC 8-3-8 because this source is not located in Clark, Floyd, Lake, or Porter County.

#### Cold Cleaner Operation

- (l) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
326 IAC 6-3 applies to manufacturing processes that have a potential to emit particulate emissions; are not listed as specifically exempt under 326 IAC 6-3-1(b); and are not regulated by another state rule listed under 326 IAC 6-3-1(c).

The cold cleaner (MS CC) at this source is a dip tank which is specifically exempted under 326 IAC 6-3-1(b)(5) because the emission of particulates is negligible. Therefore, the requirements of 326 IAC 6-3-2 do not apply to MS CC.

- (m) 326 IAC 8-3-1 (Organic Solvent Degreasing Operations)  
Pursuant to 326 IAC 8-3-1 (Organic Solvent Degreasing Operations), the cold cleaner, identified as MS CC, is subject to the requirements of 326 IAC 8-3-2 (Cold Cleaner Operations) and 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control), since the unit meets the definition of a cold cleaner degreaser under 326 IAC 1-2-18.5, utilizes an organic solvent containing volatile organic compounds (VOC) (as defined by 326 IAC 1-2-90), was constructed after the July 1, 1990, and does not have a remote solvent reservoir.
- (n) 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers)  
Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaner Degreasers), the cold cleaner, identified as MS CC, is not subject to the requirements of 326 IAC 8-3-8 because this source is not located in Clark, Floyd, Lake, or Porter County.

#### **Conclusion and Recommendation**

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on September 9, 2009.

The construction and operation of this stationary engine assembly facility shall be subject to the conditions of the attached proposed Registration No. 063-28443-00063. The staff recommends to the Commissioner that this Registration be approved.

#### **IDEM Contact**

- (a) Questions regarding this proposed permit can be directed to Sandra Carr at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate

Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5372 or toll free at 1-800-451-6027 extension 45372.

- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

**Appendix A: Emissions Calculations  
Emission Summary**

**Company Name:** Rolls-Royce Corporation  
**Address:** 758 Columbia Road, Plainfield, IN 46168  
**Permit Number:** 063-28443-00063  
**Reviewer:** Sandra Carr  
**Application Date:** September 9, 2009

<b>Emission Unit</b>	<b>PM</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>VOC</b>	<b>CO</b>	<b>Total HAP</b>	<b>Highest Individual HAP</b>
IPA Spray Booth (IPA SB)	0.003	0.003	0.003	negl.	negl.	6.49	negl.	negl.	negl.
MS Spray Booth (MS SB)	0.0002	0.0002	0.0002	negl.	negl.	3.37	negl.	negl.	negl.
Cold Cleaner (MS CC)	negl.	negl.	negl.	negl.	negl.	3.15	negl.	negl.	negl.
Combustion (Heaters)	0.01	0.05	0.05	0.004	0.61	0.03	0.51	0.01	0.01 Hexane
<b>TOTALS =</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>0.004</b>	<b>0.61</b>	<b>13.05</b>	<b>0.51</b>	<b>0.01</b>	

negl.= negligible

Source uses only non-HAP solvents.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100**

**Company Name:** Rolls-Royce Corporation  
**Address:** 758 Columbia Road, Plainfield, IN 46168  
**Permit Number:** 063-28443-00063  
**Reviewer:** Sandra Carr  
**Application Date:** September 9, 2009

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

1.42

12.2

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM <sub>10</sub> *	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.05	0.05	0.004	0.61	0.03	0.51

\*PM emission factor is filterable PM only. PM<sub>10</sub> emission factor is filterable and condensable PM<sub>10</sub> combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAP emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100**

**Company Name:** Rolls-Royce Corporation  
**Address:** 758 Columbia Road, Plainfield, IN 46168  
**Permit Number:** 063-28443-00063  
**Reviewer:** Sandra Carr  
**Application Date:** September 9, 2009

HAP - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.281E-05	7.317E-06	4.573E-04	1.098E-02	2.073E-05

HAP - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.049E-06	6.707E-06	8.537E-06	2.317E-06	1.281E-05

Methodology is the same as page 1.

**Total HAP = 0.012**  
**Highest Single HAP = 0.011 Hexane**

The five highest organic and metal HAP emission factors are provided above.  
 Additional HAP emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations  
VOC and Particulate  
from Surface Coating Operations**

**Company Name: Rolls-Royce Corporation  
Address: 758 Columbia Road, Plainfield, IN 46168  
Permit Number: 063-28443-00063  
Reviewer: Sandra Carr  
Application Date: September 9, 2009**

Material	Density (lb/gal)	Weight % Volatiles (H <sub>2</sub> O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC (lbs/hour)	Potential VOC (lbs/day)	Potential VOC (ton/yr)	Particulate Potential (ton/yr)	Transfer Efficiency	AP-42 EMISSION REDUCTION FACTOR for solvent degreasers	Controlled VOC (ton/yr)
<b>IPA SB</b>																	
Isopropyl Alcohol (IPA)	6.59	99.90%	10.0%	89.9%	8.3%	0.00%	6.00	0.042	6.46	5.92	1.48	35.55	6.49	0.00289	60%	28%	1.87
<b>MS SB</b>																	
Mineral Spirits (MS)	6.17	99.90%	0.0%	99.9%	0.0%	0.00%	1.00	0.125	6.16	6.16	0.77	18.49	3.37	0.00017	95%	28%	0.12

Uncontrolled Totals = **9.86**      **0.003**      Controlled Total = 1.99

**METHODOLOGY**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \* (8760 hrs/yr) \* (1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

Controlled VOC = ((IPA SB PTE VOC \*(1-Transfer Efficiency)) + (MS SB PTE VOC \*(1-Transfer Efficiency)))\*(1-Control Efficiency)

Emission factors are from: AP-42, Table 4.6-3: PROJECTED EMISSION REDUCTION FACTORS FOR SOLVENT DEGREASING; the required combination of controls and work practices results in a 28-83% reduction in volatile emissions. For this calculation, the minimum reduction of 28% is assumed.

**Appendix A: Emissions Calculations**  
**VOC**  
**from Cold Cleaner Operations**

**Company Name:** Rolls-Royce Corporation  
**Address:** 758 Columbia Road, Plainfield, IN 46168  
**Permit Number:** 063-28443-00063  
**Reviewer:** Sandra Carr  
**Application Date:** September 9, 2009

Solvent = Mineral Spirits  
 Density = 6.17 lb/gal  
 Tank Surface = 9 ft<sup>2</sup>

$$\begin{aligned} \text{Maximum Evaporative Solvent loss} &= (\text{tank surface area (ft}^2\text{)} \times 8760 \text{ hours/year} \times \text{Emission Factor (lbs/hr/ft}^2\text{)} \times 1 \text{ ton/2000 lbs}) \\ &= (9 \text{ ft}^2 \times 8760 \text{ hr/yr} \times 0.08 \text{ lbs/hr/ft}^2 \times 1 \text{ ton/2000 lbs}) = \mathbf{3.15} \text{ ton/yr.} \end{aligned}$$

**Controlled**

Solvent loss minimized by proper equipment and work practices =

$$\begin{aligned} \text{Controlled Evaporative Solvent loss} &= \text{Maximum Evaporative Solvent loss (ton/yr)} \times (1 - 28\% \text{ Emission Reduction}) \\ \text{Controlled Evaporative Solvent loss} &= 3.15 \text{ ton/yr} \times (1 - (28\%/100)) \\ &= \mathbf{2.27} \text{ ton/yr} \end{aligned}$$

Emission factors are from AP 42, Section 4.6, Table 4.6-2 "SOLVENT LOSS EMISSION FACTORS FOR DEGREASING OPERATIONS", and Table 4.6-3. "PROJECTED EMISSION REDUCTION FACTORS FOR SOLVENT DEGREASING", 4/81.

Emission factors are from: AP-42, Table 4.6-3: PROJECTED EMISSION REDUCTION FACTORS FOR SOLVENT DEGREASING, the required combination of controls and work practices results in a 28-83% reduction in volatile emissions. For this calculation, the minimum reduction of 28% is assumed.



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
**Governor**

*Thomas W. Easterly*  
**Commissioner**

100 North Senate Avenue  
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Toll Free (800) 451-6027  
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## **SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED**

**TO:** Pravin Patel  
Rolls-Royce Corporation  
2355 S Tibbs Ave  
Indianapolis, IN 46241

**DATE:** October 16, 2009

**FROM:** Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

**SUBJECT:** Final Decision  
Registration  
063-28443-00063

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:  
William Kleiner (VP - Quality & HSE)  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07

# Mail Code 61-53

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2		William B Kleiner VP - Quality & HSE Rolls-Royce Corp 2355 W Tibbs Ave Indianapolis IN 46241 (RO CAATS)										
3		Larry and Becky Bischoff 10979 North Smokey Row Road Mooresville IN 46158 (Affected Party)										
4		Hendricks County Commissioners 355 S Washington Danville IN 46122 (Local Official)										
5		Betty Bartley P.O. Box 149 Danville IN 46122 (Affected Party)										
6		Plainfield Town Council and Town Manager P.O. Box 65 Plainfield IN 46168 (Local Official)										
7		Hendricks County Health Department 355 S Washington Street, Suite 210 Danville IN 46122-1759 (Health Department)										
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