

217/782-2113

CONSTRUCTION PERMIT - NESHAP SOURCE

PERMITTEE

Caterpillar Inc. - East Peoria Complex  
Attn: Julie Rolffs, Environmental Team Leader  
901 West Washington Street, SS6400  
East Peoria, Illinois 61630

Application No.: 07020069

I.D. No.: 179020AAB

Applicant's Designation:

Date Received: February 23, 2007

Subject: Paint Before Assembly Project

Date Issued: TO BE DETERMINED

Location: 901 West Washington Street, East Peoria

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a paint before assembly project, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.1 Coating Lines

1.1.1 Description

Currently, the plant assembles most of a tractor and then paints the tractor. The paint before assembly project entails installation of several new coating lines which would be used to coat tractors and tractor parts prior to assembly. This method would reduce the amount of paint applied to each tractor, improve overall paint quality, and improve worker safety.

Several types of coating operations will be used to coat the tractor including powder painting, e-coat, and conventional liquid coat.

This project replaces all existing production coating operations at the plant (i.e., Buildings LL and SS) except the coating operations in Building KK. Coating operations in Building KK are not affected by this project.

1.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
D6-D10 Liquid Line	Liquid spray coating of tractor components; washer stage #1 & #3, dry-off oven, cure oven.	Waterwall Collector
D11 Booth	Liquid spray coating of tractor components; cure oven.	Dry Filter

Emission Unit	Description	Emission Control Equipment
Track & Line E-Coat Line	E-Coating of tractor components; three e-coat ovens.	None
Small E-coat Line	E-Coating of tractor components; three e-coat ovens.	None
Small/Med. Powder Line	Powder coating of tractor components; washer stage #1-3 & #5, dry-off oven, two curing ovens.	Dry Filter
Med./Large Powder Line	Powder coating of tractor components; washer stage #1-3 & #5, dry-off oven, curing oven.	Dry Filter
Powder Work Cell	Powder coating of tractor components.	Dry Filter
D6-D8 Touch-up/Repair	Liquid spray coating of tractor components.	Dry Filter
D9-D11 Touch-up/Repair	Liquid spray coating of tractor components.	Dry Filter

1.1.3 Applicable Provisions and Regulations

- a. The "affected coating line" for the purpose of these unit-specific conditions, is a coating line described in Conditions 1.1.1 and 1.1.2.
- b. Each affected coating line is subject to 35 IAC Part 215, Subpart F, Coating Operations: The Permittee shall not cause or allow the emission of volatile organic material to exceed the following limitations on coating materials, excluding water and any compounds which are specifically exempted from the definition of volatile organic material, delivered to the coating applicator:

	<u>kg/l</u>	<u>lb/gal</u>
Heavy Off-highway Vehicle Products		
Extreme Performance Prime Coat	0.42	3.5
Extreme Performance Top Coat-Air Dried	0.52	4.3
Final Repair Coat-Air Dried	0.58	4.8

[35 IAC 215.204(k)(2)]

- c. Each affected coating line is subject to 35 IAC 212.321(a), which provides that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the

allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

- d. The affected coating lines are subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR 63, Subpart Mmmm.
  - i. Organic HAP emissions from the affected coating lines shall not exceed 0.31 kg (2.6 lb) organic HAP per liter (gal) coating solids used during each 12-month compliance period [40 CFR 63.3890(b)(1)].

#### 1.1.4 Non-Applicability of Regulations of Concern

- a. The affected coating lines, which are subject to the limitations of 35 IAC 215.204, are not required to meet the limitations of 35 IAC Part 215, Subpart K (35 IAC 215.301 or 215.302) [35 IAC 215.209].
- b. The source has addressed the applicability and compliance of 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The limits in this permit are intended to ensure that the construction and modification addressed in this construction permit does not constitute a major modification of the source pursuant to this rule (See also Attachment 1).

#### 1.1.5 Control Requirements and Work Practices

- a. The Permittee shall:
  - i. Store and dispose of all coatings and organic solvents used for coating lines in closed containers; and
  - ii. Pump or drain, and collect all organic solvents used for cleaning coating lines and spray guns into closed containers in order to control emissions.
- b. Natural gas shall be the only fuel fired in the washers and ovens.
- c.
  - i. The affected coating lines and associated control devices shall be operated and maintained in accordance with good air pollution control practice to minimize emissions.
  - ii. The control equipment shall be in operation at all times when the associated emission unit(s) is in operation and emitting air contaminants.

#### 1.1.6 Production and Emission Limitations

- a. i. Emissions and operation of the affected coating lines shall not exceed the following limits. Compliance with the annual limits shall be based on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

Material	Material Usage <sup>1</sup>		VOM Content (Lbs/Gal)	VOM Emission	
	(Gal/Mo)	(Gal/Yr)		(Tons/Mo)	(Tons/Yr)
Prime Coat <sup>2</sup>	3,600	21,600	3.5	6.3	37.8
Top Coat <sup>2</sup>	4,400	26,400	4.3	9.5	56.8
Touch-up/Repair	620	3,700	4.8	1.5	8.9
Solvent	900	5,400	---	3.3	19.5
Total:				105.6	

<sup>1</sup> Usage includes material shipped off-site for reclamation or disposal.

<sup>2</sup> As applied, less water and exempt compounds.

- ii. Combined emissions of VOM from the affected coating lines shall not exceed 105.6 tons per year. Compliance with the annual limits shall be based on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- b. This permit is issued based upon negligible emissions of particulate matter from the affected coating lines. For this purpose, emissions from all such units shall not exceed a nominal emission rate of 1.0 tons/year.
- c. Emissions and operation of the fuel combustion units associated with the affected coating lines, such as washer stages, dry-off ovens, and cure ovens, shall not exceed the following limits. Compliance with the annual limits shall be based on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

Combined Maximum Rated Firing Rate (mmBtu/hr)	Pollutant	Emissions (Tons/Yr)
92.5	NO <sub>x</sub>	39.7
	CO	33.4
	PM	3.1
	VOM	2.2
	SO <sub>2</sub>	0.3

1.1.7 Testing Requirements

- a. The Permittee shall comply with the applicable initial compliance requirements of 40 CFR 63.3941 or 63.3951.

1.1.8 Monitoring Requirements

Instrumental monitoring (e.g., continuous emission monitors) are not required for the affected coating lines.

#### 1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for affected coating lines:

- a.
  - i. The name and identification number of each coating and cleaning solvent as applied.
  - ii. The usage of each coating and cleaning solvent (gallons/month and gallons/year).
  - iii. Density of each applied coating and cleaning solvent.
  - iv. The weight of VOM per volume of each coating, in lb/gal, (minus water and any compounds which are specifically exempted from the definition of VOM) as applied.
  - v. The weight of VOM per volume of each cleaning solvent, as applied (lbs/gallon).
  - vi. Solids content of each coating (lbs/gallon).
  - vii. VOM emissions from for prime coat, top coat, touch-up/repair coat, and clean-up solvent usage with supporting calculations (tons/month and tons/year).
  - viii. If credit is desired for VOM emissions from waste materials, aggregate records of the VOM content and the amount of materials disposed of or recycled shall be maintained for all coatings, cleaning solvents, and any other VOM containing material dispensed to the coating operations, which records shall be kept on at least a monthly basis.
- b.
  - i. Identification of each fuel combustion unit, e.g., cure oven, washer stage, etc., associated with the affected coating lines.
  - ii. A file containing the maximum firing rate of all associated combustion units combined (mmbtu/hr).
  - iii. A file containing the potential emissions of NO<sub>x</sub>, CO, VOM, PM, and SO<sub>2</sub> emissions from combustion sources associated with the affected coating lines with supporting documentation (tons/year).
- c. The Permittee shall comply with the applicable recordkeeping requirements of 40 CFR 63.3930 and 63.3931.

#### 1.1.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA of deviations of an affected coating line with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- i. Emissions from the affected coating lines and associated combustion units in excess of the limits specified in Condition 1.1.6 within 30 days of such occurrence.
  - ii. Operation of the affected coating lines and associated combustion units in excess of the limits specified in Condition 1.1.6 within 30 days of such occurrence.
- b. The Permittee shall comply with the applicable reporting requirements of 40 CFR 63.3920.
- c. The Permittee shall comply with the applicable notification requirements of 40 CFR 63.3910.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected coating lines without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

- a. Notwithstanding Condition 2, the coating lines in building LL and building SS may be operated until shakedown of the new affected coating lines is complete. This period may be extended by the Illinois EPA upon written request by the Permittee demonstrating that additional time is needed for transfer of production due to unanticipated delays. After this period, the coating lines in building LL and building SS must be shut down.
- i. During this period, the emissions from the affected coating lines and the existing coating lines in building LL and building SS combined shall not exceed the emission limits specified in Condition 1.1.6(a).
  - ii. During this period, the recordkeeping requirements (See Condition 1.1.9) will be used to determine compliance with the emission limits in Condition 1.1.6.

2. This permit is issued based upon the shutdown of existing coating lines in building LL and building SS as a result of the new paint before assembly project, which will handle production previously painted in these units. These existing units shall be shutdown when the new affected coating lines begin normal operation.
3. Emissions of VOM from the natural gas system shall not exceed 1.7 tons per year. Compliance with the annual limit shall be determined from a running total of 12 months of data. This limit supersedes the limit for VOM emissions from the natural gas system found in Construction Permit 06030089.

Note: the other requirements of Construction Permit 06030089, such as the operational limits for the natural gas system continue to apply.

4. The affected coating lines addressed by this construction permit may be operated under this permit until renewal of the source's CAAPP permit provided the source has submitted a complete and timely CAAPP renewal application.

If you have any questions on this permit, please contact Jason Schnepf at 217/782-2113.

Edwin C. Bakowski, P.E.  
Acting Manager, Permit Section  
Division of Air Pollution Control

ECB:JMS:

cc: Region 2  
Lotus Notes

Attachment 1 - Netting Analysis (Tons/Year)

	Date	VOM	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM	PM <sub>10</sub> /PM <sub>2.5</sub>
Project Emissions		107.8	39.7	33.4	0.3	4.1	4.1
Contemporaneous <sup>a</sup> Increases							
Tub Grinder (07030088)	8/2007 <sup>a</sup>	0.7					
Y86 Genset (06120017)	3/2007	0.3					
Gas Tank (06010015)	11/2006	1.0					
Natural Gas System (06030089)	5/2006	1.7					
Mod. to Line LL (06010087)	5/2006	8.0					
Acid Etch - KK Mod. (05070004)	10/2005	6.8					
Contemporaneous <sup>b</sup> Decreases							
Shutdown of LL and SS Lines	8/2008 <sup>a</sup>	-89.0					
NET EMISSIONS CHANGE <sup>c</sup>		37.3					
Significance Threshold:		40	40	100	40	25	15
Greater Than Significant?		No	No	No	No	No	No

Notes:

<sup>a</sup> Estimated.

<sup>b</sup> The start of the contemporaneous time period for PSD pollutants is August 2002, which is five years before construction is scheduled to commence on this project.

<sup>c</sup> The net emissions change calculation is not performed for pollutants other than VOM because the project itself does not result in a significant emissions increase of pollutants other than VOM

