

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

ITT Bell and Gossett  
Attn: Jeffrey Melo  
8200 North Austin Avenue  
Morton Grove, Illinois 60053

Application No.: 00060071                      I.D. No.: 031195ABT  
Applicant's Designation: PAINTBTH10        Date Received: June 22, 2000  
Subject: Replacement Parts Booth  
Date Issued: September 29, 2000  
Location: 8200 North Austin Avenue, Morton Grove

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of modify existing coatings operations and construction of Paint Booth #10 with dry filter as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Units PB1 - PB10 Spray Paint Booths #1 through 10  
Controls DF1, 7, 8, & 10, WC2- 6 Dry Filters and Water Curtains

1.1.1 Description

Ten electrostatic paint spray booths (PB1 through PB10) are located at various areas of the source. These paint booths are used to apply enamel coatings to pumps, pump components, and touch-up painting of fire-pump packages, replacement parts, service, and warranty items. The primary coating used at most of the paint booths is high solids red enamel paint. Other high solids enamel paints are used at the paint booths on a less frequent basis.

Paint Area 9 (PB9) is an electrostatic painting operation, which utilizes coating materials, which are compressed without compressed air or hydraulic pressure. This paint process uses only electrostatic force generated by the power supply to atomize the paint. Overspray is claimed to be virtually non-existent.

## 1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
PB1	Protectaire Model #108ARC Paint Spray Booth (Spray Paint Booth 1 (Domestic Factory))	Dry Filters DF1
PB2	Binks Model G8-84-1 Paint Spray Booth (Spray Paint Booth 2 (Downdraft))	Water Wash WC2
PB3	Binks Model #29-784 Paint Spray Booth (Spray Paint Booth 3 (Binks Automatic Line))	Water Wash WC3
PB4	Ransburg Paint Spray Booth (Spray Paint Booth 4 (Touch-up Binks))	Water Wash WC4
PB5	Binks Model #29-784 Paint Spray Booth (Spray Paint Booth 5 (North Booth))	Water Wash WC5
PB6	Ransburg Paint Spray Booth (Spray Paint Booth 6 (South Booth))	Water Wash WC6
PB7	Binks Model CNPB-10-10-T-LTH Paint Spray Booth (Spray Paint Booth 7 (Mid-Range))	Dry Filters DF7
PB8	Binks Model CPFA-8-8.T-LH Paint Spray Booth (Spray Paint Booth 8 (Small Valve))	Dry Filers DF8
PB9	ITW Ransburg Electrostatic Systems Electrostatic Paint System (Paint Area 9)	None
PB10	Replacement Parts Paint Spray Booth (Paint Booth 10)	Dry Filter DF10

## 1.1.3 Applicability Provisions and Applicable Regulations

- a. Spray Paint Booths #1 through #10 are an "affected coating line" for the purpose of these unit-specific conditions.
- b. The affected coating line is subject to the emission limits identified in Condition 1.1.6.
- c. The 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 which, 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. No owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for Miscellaneous Metal Parts and Products/Extreme Performance/Air Dried Coating. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds, which are specifically exempted from the definition of VOM, should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with 35 IAC 218 Subpart F must be demonstrated through the applicable coating analysis test methods and procedures specified in Condition 1.1.7 (see also 35 IAC 218.105(a)) and the recordkeeping and reporting requirements specified in Conditions 1.1.9(b) and 1.1.10(a) (see also 35 IAC 218.211(c)) except where noted [35 IAC 218.204(j)(2)(A)]:

kg/l	lb/gal
0.42	3.5

1.1.4 Non-Applicability of Regulations of Concern

- a. The affected coating line is not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM<sub>10</sub>, as identified in 35 IAC 212.324(a)(1).
- b. No owner or operator of a coating line subject to the limitations of 35 IAC 218.204 is required to meet the limitations of 35 IAC 218.301 or 218.302, Use of Organic Material, after the date by which the coating line is required to meet 35 IAC 218.204 [35 IAC 218.209].

1.1.5 Operational and Production Limits and Work Practices

The Permittee shall follow good operating practices for the dry filter and water curtains, including periodic inspection, routine maintenance and prompt repair of defects.

1.1.6 Emission Limitations

There are no specific emission limitations for this unit; however, there are source wide emission listed below:

- a. The total emissions of VOM from the coating operation at the source shall not exceed the following limitations:

<u>(Ton/Mo)</u>	VOM Emissions	<u>(Ton/Yr)</u>
11.20		67.21

- b. This limit is based on historical emission levels of the existing coating operation, as described in Attachment 1 plus an increase of 24.74 tons/year for VOM from the modifications to the existing coating operation (i.e., construction of Paint Booth #10). The limits on VOM, are limitations established pursuant to 35 IAC Part 203 and supersedes permits 73120077 and 88120013. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203.
- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.1.7 Testing Requirements

- a. The VOM content of each coating shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105 to establish the records required under Condition 1.1.9(b) (see also 35 IAC 218.211) [35 IAC 218.211(a)].
- b. Upon reasonable request by the Illinois EPA, pursuant to Section 39.5(7)(b) of the Act, the VOM content of specific coatings and cleaning solvents used on the affected coating line shall be determined as follows:
  - i. The VOM content of representative coatings "as applied" on the affected coating line shall be determined according to USEPA Reference Methods 24 and 24A of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a).

- ii. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittee's records pursuant to Condition 1.1.9(b) directly reflect the application of such material and separately account for any additions of solvent.

1.1.8 Monitoring Requirements

None

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected coating line to demonstrate compliance with Conditions 1.1.3 and 1.1.6:

- a. Records of the testing of VOM content of coatings and cleaning solvents pursuant to Condition 1.1.7, which include the following:
  - i. Identification of material tested;
  - ii. Results of analysis;
  - iii. Documentation of analysis methodology; and
  - iv. Person performing analysis.
- b. Pursuant to 35 IAC 218.211(c)(2), the Permittee shall collect and record all of the following information each day for the affected coating line and maintain the information at the source for a period of three years:
  - i. The name and identification number of each coating as applied on each coating line [35 IAC 218.211(c)(2)(A)]; and
  - ii. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line [35 IAC 218.211(c)(2)(B)].
- c. Records addressing use of good operating practices for the dry filters and water curtains:
  - i. Records for periodic inspection of the dry filters and water curtains with date,

individual performing the inspection, and nature of inspection; and

- ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- d. Coating usage of the affected coating line, gal/day and gal/yr;
- e. VOM content of coatings, % by wt.;
- f. Density of coatings, lb/gal;
- g. Cleanup solvent usage, gal/day and gal/yr;
- h. Density of solvent, lb/gal;
- i. The operating schedule of the affected coating line; and
- j. The aggregate monthly and annual PM and VOM emissions from the affected coating line based on the coating and solvent usage, the VOM content of such materials, the operating schedule and the typical hourly emission rate, with supporting calculations.

#### 1.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the 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:

- a. Pursuant to 35 IAC 218.211(c)(3)(A), the Permittee shall notify the Illinois EPA of any record showing violation of Condition 1.1.3(d) (see also 35 IAC 218.204) within 30 days following the occurrence of the violation.
- b. Continued operation of the affected coating line with a defect in a dry filter or water curtain that may result in emissions of particulate matter in excess of limits in Conditions 1.1.3(b) or (c) within 30 days of such an occurrence.
- c. Emissions of VOM in excess of the limits in Condition 1.1.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

- d. The Permittee shall notify the Illinois EPA in writing of the actual date of the commencement of the modifications to the existing coating operation (i.e., construction of Paint Booth #10) within 15 days after such event.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.1.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 1.1.9 and the emission factors and formulas listed below:

- a. Compliance with Condition 1.1.3(c) is assumed by proper operation of the dry filters and water curtains, as addressed by Condition 1.1.5.
- b. To determine compliance with Condition 1.1.6, emissions from the affected coating lines shall be calculated based on the following:

- i. Volatile Organic Material Emissions:

- VOM (lb) = [(Coating Usage, gal) x (Coating Density, lb/gal) x (VOM Content of Coating, % by wt.)] + [(Cleaning Solvent Usage, gal) x (Solvent Density, lb/gal)]

- ii. Particulate Matter Emissions:

- PM (lb) = (wt. of Coating Used, lb) x (wt. % Solids) x [1 - (Transfer Efficiency\* (%)/100)] x [1 - (Dry Filter or Water Curtain Efficiency\* (%)/100)]

- \* As specified by manufacturer or vendor of the spray booth and dry filter or water curtain

1.2 Units VDT1, VT1 Varnish Coating Operations

1.2.1 Description

Varnish Dip Tank #1 and the Trickle Varnish Operation are used to coat motor stators with a specially formulated varnish. A motor stator is the stationary part of the centrifugal pump containing the magnetic circuit and

associated windings. The Trickle Varnish Operation does not submerge the stators in a dip tank, but "trickles" on the part.

1.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
VDT1	Varnish Dip Tank #1	None
VT1	Trickle Varnish Coating Operation	None

1.2.3 Applicability Provisions and Applicable Regulations

- a. The Varnish Dip Tank and the Trickle Varnish Coating Operation are an "affected coating line" for the purpose of these unit-specific conditions.
- b. The affected coating line is subject to the emission limits identified in Condition 1.2.6.
- c. No owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for Magnet Wire Coating. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM, should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with 35 IAC 218 Subpart F must be demonstrated through the applicable coating analysis test methods and procedures specified in Condition 1.2.7 (see also 35 IAC 218.105(a)) and the recordkeeping and reporting requirements specified in Conditions 1.2.9(b) and 1.2.10(a) (see also 35 IAC 218.211(c)) except where noted [35 IAC 218.204(i)]:

kg/l	lb/gal
0.20	1.7

1.2.4 Non-Applicability of Regulations of Concern

- a. The affected coating line is not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM<sub>10</sub>, as identified in 35 IAC 212.324(a)(1).

- b. No owner or operator of a coating line subject to the limitations of 35 IAC 218.204 is required to meet the limitations of 35 IAC 218.301 or 218.302, Use of Organic Material, after the date by which the coating line is required to meet 35 IAC 218.204 [35 IAC 218.209].

1.2.5 Operational and Production Limits and Work Practices

None

1.2.6 Emission Limitations

The affected coating line is subject to the following:

- a. Emissions and operation of Varnish Dip Tank VDT1 shall not exceed the following limits:

VOM Emissions	
<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
0.1	0.9

This limit is based on the representations of the maximum actual VOM emissions resulting from the usage of coatings, cleanup solvents, and other VOM containing materials.

- b. The total emissions of VOM from the coating operation at the source shall not exceed the following limitations:

VOM Emissions	
<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
11.20	67.21

- c. This limit is based on historical emission levels of the existing coating operation, as described in Attachment 1 plus an increase of 24.74 tons/year for VOM from the modifications to the existing coating operation (i.e., construction of Paint Booth #10). The limits on VOM are limitations established pursuant to 35 IAC Part 203 and supersedes permits 73120077 and 88120013. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203.

- d. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.2.7 Testing Requirements

- a. The VOM content of each coating shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105 to establish the records required under Condition 1.2.7(b) (see also 35 IAC 218.211) [35 IAC 218.211(a)].
- b. Upon reasonable request by the Illinois EPA, the VOM content of specific coatings and cleaning solvents used on the affected coating line shall be determined as follows:
  - i. The VOM content of representative coatings "as applied" on the affected coating line shall be determined according to USEPA Reference Methods 24 and 24A of 40 CFR 60 Appendix A and the procedures of 35 IAC 218.105(a).
  - ii. This testing may be performed by the supplier of a material provided that the supplier provides appropriate documentation for such testing to the Permittee and the Permittee's records pursuant to Condition 1.2.9(b) directly reflect the application of such material and separately account for any additions of solvent.

1.2.8 Monitoring Requirements

None

1.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected coating line to demonstrate compliance with Conditions 1.2.3 and 1.2.6:

- a. Records of the testing of VOM content of coatings and cleaning solvents pursuant to Condition 1.2.7, which include the following:
  - i. Identification of material tested;
  - ii. Results of analysis;

- iii. Documentation of analysis methodology; and
  - iv. Person performing analysis.
- b. Pursuant to 35 IAC 218.211(c)(2), the Permittee shall collect and record all of the following information each day for the affected coating line and maintain the information at the source for a period of three years:
- i. The name and identification number of each coating as applied on each coating line [35 IAC 218.211(c)(2)(A)]; and
  - ii. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line [35 IAC 218.211(c)(2)(B)].
- c. Coating usage of the affected coating line, gal/day and gal/yr;
- d. VOM content of coatings, % by wt.;
- e. Density of coatings, lb/gal; and
- f. Cleanup solvent usage, gal/day and gal/yr;
- g. Density of solvent, lb/gal; and
- h. The operating schedule of the affected coating line; and
- i. The aggregate monthly and annual VOM emissions from the affected coating line based on the coating and solvent usage, the VOM content of such materials, the operating schedule and the typical hourly emission rate, with supporting calculations.

#### 1.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the 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:

- a. Pursuant to 35 IAC 218.211(c)(3)(A), the Permittee shall notify the Illinois EPA of any record showing violation of Condition 1.2.3(d) (see also 35 IAC

218.204) within 30 days following the occurrence of the violation.

- b. Emissions of VOM in excess of the limits in Condition 1.2.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.
- c. The Permittee shall notify the Illinois EPA in writing of the actual date of the permanent shutdown of Varnish Dip Tank VDT2 within 15 days after such event.

1.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.2.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 1.2.9 and the emission factors and formulas listed below:

To determine compliance with Condition 1.2.6, emissions from the affected coating line shall be calculated based on the following:

$$\text{VOM (lb)} = [(\text{Coating Usage, gal}) \times (\text{Coating Density, lb/gal}) \times (\text{VOM Content of Coating, \% by Wt.})] + [(\text{Cleaning Solvent Usage, gal}) \times (\text{Solvent Density, lb/gal})]$$

- 2. Varnish Dip Tank VDT2 shall be permanently shut down within 180 days of the commencement of modifications to the existing coating operation (i.e., construction of Paint Booth #10).

If you have any questions on this, please call Robin Helmerichs at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:RBH:jar

cc: Region 1

Attachment 1 - Net VOM Emissions Increase Determination

Table 1  
1998-1999 Average Emissions from Coating Operation

<u>Emission Unit</u>	<u>VOM Emissions (Tons/Year)</u>		
	<u>1998</u>	<u>1999</u>	<u>Average</u>
Paint Booth #1	0.14	0.25	0.20
Paint Booth #2	10.46	12.94	11.70
Paint Booth #3	6.13	6.13	6.13
Paint Booth #4	4.01	4.62	4.32
Paint Booth #5	2.70	4.17	3.44
Paint Booth #6	2.34	3.24	2.79
Paint Booth #7	1.30	1.30	1.30
Paint Booth #8	0.71	1.13	0.92
Paint Booth #9	---	0.03	0.02
Varnish Dip Tanks VDT1 and VDT2 (combined)	1.60	1.60	1.60
Cleaning Solvent Usage Emissions	9.32	11.40	<u>10.36</u>
		Total	42.78

Table 2  
Contemporaneous VOM Increases

<u>Emission Unit</u>	<u>Permit</u>	<u>VOM (Ton/Yr)</u>
Aluminum Die Cast Pot	96030281	0.01*
Plasma Welding & Heat Shrink Oven	97030117	0.01*
Paint Area 9	98120083	0.09
Trickle Varnish Operation	00020047	<u>0.90</u>
	Total	1.01

Table 3  
Contemporaneous VOM Decreases

<u>Emission Unit</u>	<u>VOM (Ton/Yr)</u>
Shutdown of Varnish Dip Tank VDT2	0.70**

Table 4  
Net VOM Emission Increase

	<u>VOM (Ton/Yr)</u>
Coating Operation (Condition 5.5.3(a))	67.21
1998-1999 Average Emissions from Coating Operation	- 42.78
Contemporaneous Decreases	- 0.70
<u>Contemporaneous Increases</u>	<u>+ 1.01</u>
Net Change in Emissions	+ 24.74

\* Potential to Emit.

\*\* Difference between the actual VOM emissions from Varnish Dip Tanks VDT1 and VDT2 (combined) averaged over the last two calendar years and the VOM limit for Varnish Dip Tank VDT1 in Condition 1.2.6 (1.60 tons/yr - 0.90 tons/yr = 0.70 tons/yr).

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