



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: March 10, 2008

RE: Emerson Power Transmission MCGill / 181-25389-00030

FROM: Matthew Stuckey, Deputy 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



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

REGISTRATION OFFICE OF AIR QUALITY

**Emerson Power Transmission McGill Manufacturing
705 North 6th Street
Monticello, IN 47960**

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

Registration No. 181-25389-00030	
Issued by: Original signed by Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: March 10, 2008

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

The Registrant owns and operates a stationary cam roller manufacturing plant.

Source Address:	705 North 6 th Street, Monticello, IN 47960
Mailing Address:	705 North 6 th Street, Monticello, IN 47960
General Source Phone Number:	574-583-9171
SIC Code:	3562
County Location:	White County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) Lindeburg Quench Furnace, identified as F 0340, fueled by natural gas, constructed in 1979, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0340.
- (b) One (1) Holcraft Quench Furnace, identified as F1606, fueled by natural gas, constructed in 1982, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F1606.
- (c) One (1) Lindeburg Quench Furnace, identified as F0496, fueled by natural gas, constructed in 2006, with a heat input capacity of 4.0 MMBtu/hr and venting to stack F0496.
- (d) One (1) Lindeburg Draw Oven, identified as F0957, fueled by natural gas, constructed in 2006, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0957.
- (e) One (1) natural gas-fired washer, with a capacity of 0.225 MMBtu/hr.
- (f) Twenty-four (24) natural gas-fired space heaters, with a total maximum capacity of 6.7 MMBtu/hr.
- (g) Seven (7) metal surface treatment units/metal machining operations.
- (h) One (1) black oxide dip coating process line.

SECTION B

GENERAL CONDITIONS

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

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]

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]

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]

- (a) All terms and conditions of permits established prior to Registration No.181-25389-00030 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)]

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 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)]

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)]

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) Lindeburg Quench Furnace, identified as F 0340, fueled by natural gas, constructed in 1979, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0340.
- (b) One (1) Holcraft Quench Furnace, identified as F1606, fueled by natural gas, constructed in 1982, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F1606.
- (c) One (1) Lindeburg Quench Furnace, identified as F0496, fueled by natural gas, constructed in 2006, with a heat input capacity of 4.0 MMBtu/hr and venting to stack F0496.
- (d) One (1) Lindeburg Draw Oven, identified as F0957, fueled by natural gas, constructed in 2006, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0957.
- (e) One (1) natural gas-fired washer, with a capacity of 0.225 MMBtu/hr.
- (f) Twenty-four (24) natural gas-fired space heaters, with a total maximum capacity of 6.7 MMBtu/hr.
- (g) Seven (7) metal surface treatment units/metal machining operations.
- (h) One (1) black oxide dip coating process line.

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

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE 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).

Company Name:	Emerson Power Transmission McGill Manufacturing Company
Address:	705 North 6 th Street
City:	Monticello, IN 47960
Phone Number:	317-547-583-9171
Registration No.:	181-25389-00030

I hereby certify that Emerson Power Transmission McGill Manufacturing is :

still in operation.

I hereby certify that Emerson Power Transmission McGill Manufacturing is :

no longer in operation.

in compliance with the requirements of Registration No. 181-25389-00030.

not in compliance with the requirements of Registration No. 181-25389-00030.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

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.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for Re-Registration

Source Description and Location
--

Source Name:	Emerson Power Transmission McGill Manufacturing Co.
Source Location:	705 North 6th Street, Monticello, IN 47960
County:	White
SIC Code:	3562
Registration No.:	181-25389-00030
Permit Reviewer:	Rebecca Jacobs

On October 10, 2007, the Office of Air Quality (OAQ) received an application from Emerson Power Transmission McGill Manufacturing Co. Inc., related to the operation of an existing stationary cam roller manufacturing plant.

Existing Approvals

The source has been operating under Registration No. 181-4167-00030, issued on December 16, 1994.

County Attainment Status

The source is located in White County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are

considered when evaluating the rule applicability relating to ozone. White 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.

White County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.

- (c) Other Criteria Pollutants
White County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. 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 2-5.5 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Emerson Power Transmission McGill Manufacturing on October 10, 2007, relating to re-registering the source.

The source consists of the following existing emission unit(s):

- (a) One (1) Lindeburg Quench Furnace, identified as F 0340, fueled by natural gas, constructed in 1979, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0340.
- (b) One (1) Holcraft Quench Furnace, identified as F1606, fueled by natural gas, constructed in 1982, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F1606.
- (c) One (1) Lindeburg Quench Furnace, identified as F0496, fueled by natural gas, constructed in 2006, with a heat input capacity of 4.0 MMBtu/hr and venting to stack F0496.
- (d) One (1) Lindeburg Draw Oven, identified as F0957, fueled by natural gas, constructed in 2006, with a heat input capacity of 2.0 MMBtu/hr and venting to stack F0957.
- (e) One (1) natural gas-fired washer, with a capacity of 0.225 MMBtu/hr.
- (f) Twenty-four (24) natural gas-fired space heaters, with a total maximum capacity of 6.7 MMBtu/hr.
- (g) Seven (7) metal surface treatment units/metal machining operations.
- (h) One (1) black oxide dip coating process line.

Enforcement Issues

Emerson Power Transmission McGill Manufacturing Company was issued a Registration No. 181-4167-00030 on November 21, 1994, for a cam roller bearing manufacturing plant. Pursuant to 326 IAC 2-5.5-2(b), the source was required to apply for Re-Registration by November 25, 2000. On October 10, 2007, IDEM, OAQ received an application from Emerson Power Transmission McGill Manufacturing Company. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the operating permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Re- 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.

Process/Emission Unit	Potential To Emit of the Entire Source (tons/year)							
	PM	PM10*	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Combustion Units	0.92	0.92	0.0728	12.1	0.667	10.2	-	-
Surface Treatment	0.36	0.36	-	-	-	-	0.068	.0179 Nickel
Black Oxide Process	-	-	-	-	0.71	-	-	-
Machining	-	-	-	-	2.94	-	-	-
Storage Tanks	-	-	-	-	0.14	-	0.127	0.127 Methanol
Heat Treating	0.10	0.10	0.01	1.01	0.05	0.81	-	-
Fugitive Emissions	1.057	1.057	.057	8.85	4.231	7.396	-	-
Total PTE of Entire Source	1.4	1.4	0.08	13.1	4.5	11.0	0.068	.0179 Nickel

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 (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of Nitrogen Oxides (NOx) are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.
- (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 HAPs 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 Standards of Performance for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit, since the tank capacities are smaller than 75 cubic meters.

- (b) There are no other New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

Compliance Assurance Monitoring (CAM)

- (d) 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.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-5.5 (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 HAPs 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.

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 October 10, 2007.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 181-25389-00030. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Rebecca Jacobs 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) 234-5378 or toll free at 1-800-451-6027 extension 4-5378.
- (b) A copy of the findings is available on the Internet at: www.in.gov/idem/permits/air/pending.html.
- (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.in.gov/idem/permits/guide/.

Appendix A: Emissions Calculations

Company Name: Emerson Power Transmission McGill Manufacturing Co.

Address: 705 North 6th Street, Monticello, IN 47960

Permit No.: R181-25389-00028

Reviewer: Rebecca Jacobs

Summary of Potential Emissions

<u>Emission Source</u>	<u>NO_x (tpy) (a)</u>	<u>CO (tpy)</u>	<u>SO₂ (tpy)</u>	<u>VOC (tpy)</u>	<u>PM (tpy)</u>	<u>Total HAP (lbs/year)</u>
Existing Units:						
Combustion Units	12.1	10.2	0.0728	0.667	0.92	-
Surface Treatment	-	-	-	-	0.36	135.98
Black Oxide Process	-	-	-	0.71	-	-
Machining	-	-	-	2.94	-	-
Storage Tanks	-	-	-	0.14	-	-
Heat Treating	1.01	0.81	0.01	0.05	0.10	-
	-	-	-	-	-	-
Final Total (b):	13.1	11.0	0.08	4.5	1.4	136.0

a/tpy = tons per year; NO_x = nitrogen oxides; CO = carbon monoxide; SO₂ = sulfur dioxide; PM = particulate matter

b/Emission rates less than 0.001 tpy (2 pounds) are considered to be negligible.

Appendix A: Emissions Calculations
 Company name; Emerson Power Transmission McGill Manufacturing Co.
 Address: 7 05 North 6th Street, Monticello, IN 47960
 Permit No.: 81-25389-00032
 Reviewer: Rebecca Jacobs

Combustion Source Calculations - Potential Emissions

Objective:

Estimate potential emissions from natural gas-fired space heaters, a powder coat paint line, an automatic paint line, boilers, and heat treatment units in Plant 1 of the EPT facility.

Given:

- Natural gas-fired space heaters are used to maintain the ambient indoor air temperatures at a comfortable level.
- Assume Space heaters could be in operation all year (365 days).
- Number of shifts per day = 3 shift(s)
- Number of hours per shift = 8 hours
- Potential operating days per week = 7 days
- Heat content of natural gas = 1,020 BTU/cf

Unit Description	# Units	Operating Time		BTU Rating per Unit (MMBTU/hr)
		(days/year)	(hours/year)	
Existing Units:				
<i>Comfort Heating</i>				
Trane Make-up Air	1	365	8,760	3.025
Sterling Make-up air	2	365	8,760	2.475
Trane Direct fire	11	365	8,760	0.825
Infrared Heaters	9	365	8,760	0.100
Forced Air Heater	1	365	8,760	0.308
				6.733
<i>Heat Treat Units</i>				
Lindeburg Quench Furnace 340	1	365	8,760	2.00
Holcraft Quench Furnace 1606	1	365	8,760	2.00
New Lindeburg Quench Furnace	1	365	8,760	4.00
High Temperature Draw Furnace	1	365	8,760	2.00
<i>Surface Preparation</i>				
5-stage Washer	0	365	8,760	2.00
Units to Be Removed or Replaced:				
<i>None</i>				
Proposed Units:				
<i>None</i>				

Appendix A: Emissions Calculations
 Company name; Emerson Power Transmission McGill Manufacturing Co.
 Address: 7 05 North 6th Street, Monticello, IN 47960
 Permit No.: 81-25389-00032
 Reviewer: Rebecca Jacobs

Combustion Source Calculations - Potential Emissions (Continued)

- AP-42 Emission Factors (Table 1.4-1):

Description	NO _x (lb/MMScf)	CO (lb/MMScf)	SO ₂ (lb/MMScf)	VOC (lb/MMScf)	TSP (lb/MMScf)
Small Boilers (<100 MMBTU/hr)	100	84	0.6	5.5	7.6

Notes:

lb/MMScf = pounds per million standard cubic feet

Assumptions:

- Space heaters are in operation 24 hours per day. Operation of the remaining equipment is based on hours per shift.

Calculations:

Unit Description	Total Gas Consumption (MMcf/yr)	NO _x (tpy)	CO (tpy)	SO ₂ (tpy)	VOC (tpy)	TSP (tpy)
Existing Units:						
<i>Comfort Heating</i>						
Trane Make-up Air	25.98	1.299	1.091	7.79E-03	0.0714	0.0987
Sterling Make-up air	42.51	2.126	1.785	1.28E-02	0.1169	0.1615
Trane Direct fire	77.94	3.897	3.273	2.34E-02	0.2143	0.2962
Infrared Heaters	7.73	0.386	0.325	2.32E-03	0.0213	0.0294
Forced Air Heater	2.65	0.132	0.111	7.94E-04	0.0073	0.0101
		7.840	6.586	0.047	0.431	0.596
<i>Heat Treat Units</i>						
Lindeburg Quench Furnace 340	17.18	0.859	0.721	5.15E-03	0.0472	0.0653
Holcraft Quench Furnace 1606	17.18	0.859	0.721	5.15E-03	0.0472	0.0653
New Lindeburg Quench Furnace	34.35	1.718	1.443	1.03E-02	0.0945	0.1305
High Temperature Draw Furnace	17.18	0.859	0.721	5.15E-03	0.0472	0.0653
<i>Surface Preparation</i>						
5-stage Washer (Removed)	0.00	0.000	0.000	0.00E+00	0.0000	0.0000
Subtotal Existing Potential Emissions:		12.1	10.2	0.1	0.7	0.9
Units to Be Removed or Replaced:						
<i>None</i>						
Subtotal Potential Emissions to be Removed:		0.00	0.00	0.00	0.00	0.00
Proposed Units:						
<i>None</i>						
Subtotal Proposed Potential Emissions:		0.00	0.00	0.00E+00	0.0000	0.000
Total Final Potential Emissions (tpy):		12.1	10.2	0.0728	0.667	0.922

Notes:

MMBTU/hr = million British Thermal Units per hour; MMcf/yr = million cubic feet per year; tpy = tons per year

Appendix A: Emissions Calculations
 Company name: Emerson Power Transmission McGill Manufacturing Co.
 Address: 705 North 6th Street, Monticello, IN 47960
 Permit No.: R181-25389-00030
 Reviewer: Rebecca Jacobs

Surface Treatment Source Calculations - Potential Emissions

Objective:

Estimate potential emissions from surface treatment of metal parts

Given:

- Metals parts are treated in six Harperizers. Four wet units and two dry units.
- Metals parts are treated in one Wheelabrator. This is a wet unit.
- Wet Harperizers and Wheelabrators produce no particulate air emissions. All metal particles are trapped by fluid in the unit.
- Potential number of shifts per day = 3 shift
- Potential number of days per week = 7 days
- Potential number of hours surface treatment units used per week = 168 hours
- Potential operating time per year = 8,760 hours
- All parts blasted are ductile iron. The facility uses materials from several different suppliers. The materials are represented as comprised of the following by weight:

Compound	Maximum Percent Composition
Chromium	5
Cobalt	5
Lead	1
Manganese	2
Nickel	5
Phosphorous	1
Other (a)	99

(a) Other includes aluminum, carbon, cerium, copper, iron, magnesium, molybdenum, silicon, sulfur, tin, and yttrium.

- Site-specific Emission Factors:

Description	PM Emission Factor (lbs/hour)
Metal loss rate from parts treated in dry Harperizer is assumed to equal the maximum PM emission rate. ¹	0.082

Assumptions:

- All of the particulate matter emitted is ductile iron.

Calculations:

PM Emissions			
Source	Hours per Year	Total PM Emitted (lbs/year)	(tpy)
Harperizers	8,760	715.7	0.358
Total:		715.686	0.358

Appendix A: Emissions Calculations

Company name: Emerson Power Transmission McGill Manufacturing Co.

Address: 705 North 6th Street, Monticello, IN 47960

Permit No.: R181-25389-00030

Reviewer: Rebecca Jacobs

Surface Treatment Source Calculations - Potential Emissions (Continued)

HAP Emissions			
Compound	Maximum Percent Composition	Emissions	
		(lbs/yr)	(tpy)
Chromium	5	35.7843	1.79E-02
Cobalt	5	35.7843	1.79E-02
Lead	1	7.16E+00	3.58E-03
Manganese	2	14.3137	7.16E-03
Nickel	5	35.7843	1.79E-02
Phosphorous	1	7.16E+00	3.58E-03
Other	99		
Total Actual HAP Emissions:		135.98	6.80E-02

Notes:

lbs/yr = pounds per year; tpy = tons per year

1- Reported in Air Emissions Inventory McGill Manufacturing, August 12, 2003, ATC Project No. 86.07494.0006

Appendix A: Emissions Calculations
 Company name: Emerson Power Transmission McGill Manufacturing Co.
 Address: 705 North 6th Street, Monticello, IN 47960
 Permit No.: R181-25389-00030
 Reviewer: Rebecca Jacobs

Black Oxide Source Calculations - Potential Emissions

Objective:

Estimate actual VOC emissions from the black oxide operations at the facility.

Given:

- Pen Dip 300 / Perkote usage 7,085 lbs per year
- All other process material contain no VOC
- Number of days in operation per week = 7 days
- Number of shifts per day = 3 shift
- Number of hours in use per shift = 8 hours
- Number of weeks in operation per year = 51 weeks
- potential number of hours in operation per year = 8,568 hours

Assumptions:

- 20% of oil used in the process is emitted to the air as VOC. The remainder is skimmed off the rinse tank and managed as used oil

Calculations:

- Emissions from Black Oxide process:
 Emissions from Pen Dip 300 / Perkote:
 7085.3 lbs total weight per year
 20% Fraction emitted
 1417.1 potential lbs VOC emissions per year

1,417.1	Total lbs VOC emissions per year
0.7	Total tons VOC emissions per year
3.97	Max lbs VOC emissions per day

Appendix A: Emissions Calculations

Company name: Emerson Power Transmission McGill Manufacturing Co.

Address: 705 North 6th Street, Monticello, IN 47960

Permit No.: R181-25389-00030

Reviewer: Rebecca Jacobs

Machining and Coolant Use Calculations - Potential Emissions**Objective:**

Estimate potential emissions from the production area where metal parts are machined at the EPT facility.

Given:

- Metals parts are cut in enclosed mills and open screw machines in the production area.
- Metal chips and shavings produced by these machines are too large to remain suspended in the air as
- Number of shifts per day = 3 shifts
- Hours machines are in use per shift = 8 hours
- Number of days per week = 5 days
- Number of days per year = 365 days
- Actual operating time per year = 8,760 hours

Properties of VOC -containing fluids used

Product	Density (lbs/gal)	Percent Volatile	Usage	
			(gal/year)	(lbs/year)
Cimstar 40 SC	8.93	19.0%	2,638	23,553
Oak Kool 632-C	8.42	19.0%	463	3,901
Mobil DTE oils	7.16	1.0%	4710	33,730
		VOC (lbs/gal)		
UFM 212 - Cutting Oil	7.41	0.03	11,184	82,904

Assumptions:

- Metal chips and shavings produced by these machines are too large to remain suspended in the air as particulate matter emissions
- Percent Volatile of Cimstar 40 SC is approximately the same as Cimstar 40 B
- Percent Volatile of Mobil DTE oil is at most 1.0%

Product	Percent Volatile	VOC Uncontrolled		VOC Controlled	
		(lbs/yr)	(tpy)	(lbs/yr)	(tpy)
Cimstar 40 SC	19.0%	4,475	2.2	4,475	2.2
Oak Kool 632-C	19.0%	741	0.4	741	0.4
Mobil DTE oils	1.0%	337	0.169	337	0.169
	VOC (lbs/gal)				
UFM 212 - Cutting Oil	0.03	336	0.168	336	0.168
Total Potential Emissions:		5,889	2.9	5,889	2.9

Notes:

lbs/yr = pounds per year; tpy = tons per year

Appendix A: Emissions Calculations
 Company name: Emerson Power Transmission McGill Manufacturing Co.
 Address: 705 North 6th Street, Monticello, IN 47960
 Permit No.: R181-25389-00030
 Reviewer: Rebecca Jacobs

Storage Tank Source Calculations - Potential Emissions

Objective:

Estimate potential emissions from VOC storage in tanks at the EPT facility.

Given:

- The following cylindrical tanks have VOC emissions

Tank	Volume	Cubic Feet	Diameter	Height	Roof	Color
Recovered Cutting Oil	600	80	4.0	6.4	1' Cone	Al /Al
New Cutting oil	8000	1,069	10.0	13.6	1' Cone	Al /Al
Used cutting oil	8000	1,069	10.0	13.6	1' Cone	Al /Al
Used Oil	8000	1,069	10.0	13.6	1' Cone	Al /Al
Oily Process Water	3000	401	8.0	8.0	1' Cone	Al /Al
Mop Water	3000	401	6.4	12.5	1' Cone	Al /Al

- The following horizontal tanks have VOC emissions

Tank	Volume	Cubic Feet	Diameter	Length
Methanol	6000	802	7.0	20.8

- EPA Tanks version 4.0.9d will be used to estimate VOC emissions

Assumptions:

- Cutting oil produces emissions equivalent to distillate fuel oil No. 2
- Potential emissions are based on two turnovers per month

Storage Tank Source Calculations - Potential Emissions

Estimated Emissions:

Tank	Lbs/year VOC
Recovered Cutting Oil	0.3
New Cutting oil	4.8
Used cutting oil	4.8
Used Oil	4.8
Oily Process Water	2.1
Mop Water	0.1
Methanol	254.3

Total Potential VOC Emissions = 271.2 lbs/year
 0.1356 tpy

Appendix A: Emissions calculations

Company name: Emerson Power Transmission McGill Manufacturing Co.

Address: 705 North 6th Street, Monticello, IN 47960

Permit No.: R181-25389-00030

Reviewer: Rebecca Jacobs

Heat Treat Source Calculations - Potential Emissions**Objective:**

Estimate actual emissions for sources other than combustion units in the heat treating units. Use mass balance and thermodynamic properties of part (metal) and oil for quenching operations.

Given:

- Number of existing units =	21 units
- Number of proposed units =	0 units
- Number of shifts per day =	3 shift
- Number of days per week =	7 days
- Hours surface treatment units used per week =	168 hours
- Number of weeks operating per year =	52 weeks
Actual operating time per year =	8,760 hours
- Quench oil density	7.34 lb/gal (at 68°F)
- Average radius of metal part =	2 inches
- Average thickness of metal part =	0.5 inch
- 1 cubic foot =	7.481 gallons
- 1 gallon distillate oil contains	138690 btu
- Methanol combusted in furnaces as carbon source	14,826 gallons

Assumptions:

- Average residual oil thickness = 0.001 inch (1 mil)
- Portion of parts retaining residual oil = 100 percent
- Potential emissions are prorated based on operating hours.
- Additional proposed units will increase production proportionately.
- Only natural gas used to control furnace atmosphere is included here. Natural gas burned for heat is accounted for

Calculations:

- Number of metal parts treated per year =	2.00E+06 parts
- Surface area treated per part =	31 square inches
- Surface area treated per part =	0.22 square feet
- Surface area treated per year =	436,332 square feet
- Surface area containing residual oil =	436,332 square feet
- Volume of residual oil burned off =	36.4 cubic feet
- Volume of residual oil burned off =	272 gallons per year
- Additional units =	- units
- Increase in production =	0%

Appendix A: Emissions calculations

Company name: Emerson Power Transmission McGill Manufacturing Co.

Address: 705 North 6th Street, Monticello, IN 47960

Permit No.: R181-25389-00030

Reviewer: Rebecca Jacobs

Heat Treat Source Calculations - Potential Emissions Continued

- AP-42 Emission Factors (Tables 1.3-1, 1.3-3, 1.3-10, 1.4-1, 1.4-2, and 1.4-4):

Description	Lead lb/10 ⁶ scf	NO _x lb/10 ⁶ scf	PM lb/10 ⁶ scf	SO ₂ lb/10 ⁶ scf	VOC lb/10 ⁶ scf	CO lb/10 ⁶ scf
Natural Gas Combustion	0.0005	100	7.6	0.6	5.5	84
	lb/10 ¹² Btu	lb/10 ³ gal	lb/10 ³ gal	lb/10 ³ gal	lb/10 ³ gal	lb/10 ³ gal
Methanol Combustion ¹	-	12.4	3.5	0.05	0.2	5
Distillate Fuel Oil Combustion	9	20	3.5	7.1	0.2	5

Notes:

lb/MMScf = pounds per million standard cubic feet

1 - Methanol emission factors for NO_x, SO₂ from EIA**Assumptions:**

- Quench oil combustion produces emissions equivalent to 0.05% sulfur distillate fuel oil combustion

Calculations:

Usage		Lead Lbs	NO _x Lbs	PM Lbs	SO ₂ Lbs	VOC Lbs	CO Lbs
Natural Gas	10 ⁶ Scf	18.396	0.009	1839.600	139.810	11.038	1545.264
Methanol	10 ³ Gallons	14.826	-	183.842	51.891	0.741	74.130
Quench Oil	10 ³ Gallons	0.27		5.440	0.952	1.931	1.360
	10 ¹² Btu equivalent	0.00	0.000				
Total Emission	Lbs/Year	0.010	2028.883	192.653	13.710	104.198	1620.754
Total Emission	tpy	-	1.014	0.096	0.007	0.052	0.810