INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: September 23, 2005

RE: Essex Group Vincennes / 083-21221-00008

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

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:

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David Cummings
Essex Group - Vincennes Plant
P.O. Box 1601
Forty Wayne, IN 46801-1601

September 23, 2005

Re: 083-21221-00008
PSD Significant Source Modification to:
Part 70 permit No.: T083-7422-00008

Dear Mr. Cummings:

Essex Group was issued Part 70 operating permit T083-7422-00008 on May 3, 2004 for the operation of a stationary magnet wire manufacturing plant. An application to modify the source was received on May 3, 2005. Pursuant to 326 IAC 2-7-10.5, Essex Group is approved to complete the following activities:

(a) Increase the production capacity of sixteen (16) existing magnet wire coating units: 201E and 201W through 208E and 208W. The existing capacity is 658 pounds of copper wire per hour, per unit. The new capacity is 900 pounds of copper wire per hour, per unit.

(b) Construct ten (10) wire annealers to magnet wire coating units 201E and 201W through 203E and 203W, 206E and 206W through 208E and 208W and 209E and 209W through 212E and 212W. Currently, each E/W pair shares a common annealer. After the modification, each unit will have its own annealer. The annealer additions allow Essex greater flexibility in oven scheduling, reduced downtime, reduced scrap generation and greater energy use efficiency.

(c) Construct emission capture devices on the lubricant coating subsections of units 201E and 201W through 212E and 212W.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

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

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

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

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

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

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

This significant source modification authorizes the modification of existing emission units. Operating conditions will be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5 and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Bob Sidner, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (703) 633-1701 to speak directly to Mr. Sidner. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, or call (800) 451-6027, and ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,
Original signed by

Paul Dubenetzky,
Assistant Commisioner
Office of Air Quality

Attachments

ERG/BS

cc: File - Knox County
Knox County Health Department
Air Compliance Section Inspector - Jennifer Schick
Compliance Data Section
Administrative and Development

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PART 70 OPERATING PERMIT RENEWAL
OFFICE OF AIR QUALITY

Essex Group, Inc.
1299 East Essex Rd.
Vincennes, Indiana 47591

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T083-7422-00008	
Issued by: Paul Dubenetzky, Chief Permits Branch Office of Air Quality	Issuance Date: May 3, 2004 Expiration Date: May 3, 2009

First Significant Source Modification No.: T083-21221-00008	Affected Pages: all
Original signed by Paul Dubenetzky, Assistant Commisioner Office of Air Quality	Issuance Date: September 23, 2005

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary copper rod production and magnet wire manufacturing plant.

Responsible Official(s):	Plant Manager(s) for Concast and Magnet Wire plants
Source Address:	1299 East Essex Road, Vincennes, IN, 47591
Mailing Address:	1299 East Essex Road, Vincennes, IN, 47591
SIC Code:	3351 and 3357
County Location:	Knox
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major under PSD rules Major Source, Section 112 of the Clean Air Act

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

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

Magnet Wire Production - Departments 200 and 300

Magnet Wire Production - Departments 200 and 300

(a) Two (2) Department 200 Emission Units, identified as units 201E and 201W, each constructed in 1989 and modified in 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(b) Four (4) Department 200 Emission Units, identified as units 202E, 202W, 203E, and 203W, each constructed in 1993 and modified in 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(c) Six (6) Department 200 Emission Units, identified as units 204E, 204W, 205E, 205W, 206E, and 206W, each constructed in 1995 and modified in 1997 or 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(d) Four (4) Department 200 Emission Units, identified as units 207E, 207W, 208E, and 208W, constructed in 1994 and modified in 1997 and 2005. Each Emission Unit consists

of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(e) Eight (8) Department 200 Emission Units, identified as units 209E, 209W, 210E, 210W, 211E, 211W, 212E, and 212W, each constructed in 1998 and modified in 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 658 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(f) Four (4) Department 200 Emission Units, identified as units 213E, 213W, 214E, and 214W, each constructed in 1998. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour. Emissions from enamel curing are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(g) Four (4) Department 200 Emission Units, identified as units 215E, 215W, 216E, 216W, each constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour, using integral thermal oxidizers to control emissions from enamel curing, and exhausting to stacks identified with the same names as their respective emission units.

(h) Eight (8) Department 300 Emission Units, identified as units 301E, 301W, 302E, 302W, 303E, 303W, 304E, and 304W constructed in 1994. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(i) Twelve (12) Department 300 Emission Units, identified as units 305E, 305W, 306E, 306W, 309E, 309W, 310E, 310W, 311E, 311W, 312E, and 312W, each constructed in 1996. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(j) Four (4) Department 300 Emission Units, identified as units 307E, 307W, 308E, and 308W constructed in 1995. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(k) Eight (8) Department 300 Emission Units, identified as units 313E, 313W, 314E, 314W, 315E, 315W, 316E, and 316W constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

Copper Rod and Bar Production

(l) One (1) Copper Rod and Bar Manufacturing Process, identified as P-1, constructed in 1976, a maximum capacity of 20 tons of copper per hour, with emissions uncontrolled, exhausting to stack S-1, and consisting of:

(1) One (1) natural gas-fired vertical melt furnace, with a heat input capacity of 24 MMBtu/hr,

(2) One (1) holding furnace, with a heat input capacity of 2.0 MMBtu/hr,

(3) One (1) tundish, with a heat input capacity of 1.5 MMBtu/hr, and

(4) Various ancillary launders, with an aggregate heat input capacity of 2.5 MMBtu/hr.

Alcohol Quench Process

(m) One (1) mill emulsion system identified as P-2 Mill Emulsion System, constructed in 1976, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume Isopropyl Alcohol (2-propanol) through sprays in an enclosed rolling mill stand area, with emissions uncontrolled, and exhausting to stack/vent V-1;

(n) One (1) quench system identified as P-2 Quench System, constructed in 1976, which pumps a quench solution containing 0.8% - 3.0% by volume Isopropyl Alcohol (2-propanol) ejectors into tubes, with emissions uncontrolled, and exhausting to stack/vent V-2;

The maximum capacity of the P-2 Alcohol Quench Process (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-propanol (IPA) per hour.

Storage Tanks

(o) One (1) 15,000 gallon mill emulsion storage tank, constructed in 1995;

(p) One (1) 7,500 gallon quench solution storage tank, constructed in 1978.

(q) Two (2) 7,000 gallon isopropyl storage tanks, constructed in 1988.

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

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

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

(b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]

(c) Activities with emissions equal to or less than the following thresholds: 5 tons per year PM or PM10, 10 tons per year SO_2, NO_x, or VOC, 0.2 tons per year Pb, 1.0 tons per year of a single HAP, or 2.5 tons per year of any combination of HAPs:

(1) Six (6) degreaser units, identified as ‘P, T1, T2, T3, T4, and T5' using solvent identified as ‘Thinner-907' and mechanical agitation. [326 IAC 8-3-2] [326 IAC 8-3-5]

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

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

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

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

SECTION B GENERAL CONDITIONS

…

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

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

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Magnet Wire Emission Units

Magnet Wire Production - Department 200

(a) Two (2) Department 200 Emission Units, identified as units 201E and 201W, each constructed in 1989 and modified in 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(b) Four (4) Department 200 Emission Units, identified as units 202E, 202W, 203E, and 203W, each constructed in 1993 and modified in 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(c) Six (6) Department 200 Emission Units, identified as units 204E, 204W, 205E, 205W, 206E, and 206W, each constructed in 1995 and modified in 1997 or 1998 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(d) Four (4) Department 200 Emission Units, identified as units 207E, 207W, 208E, and 208W, constructed in 1994 and modified in 1997 and 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 900 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(e) Eight (8) Department 200 Emission Units, identified as units 209E, 209W, 210E, 210W, 211E, 211W, 212E, and 212W, each constructed in 1998 and modified in 2005. Each Emission Unit consists of one (1) annealer, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, and one (1) topical lube applicator. Each unit has a maximum copper wire producing capacity of 658 lb copper per hour. Emissions from enamel curing and lubricant coating are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(f) Four (4) Department 200 Emission Units, identified as units 213E, 213W, 214E, and 214W, each constructed in 1998. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour. Emissions from enamel curing are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(g) Four (4) Department 200 Emission Units, identified as units 215E, 215W, 216E, 216W, each constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour, using integral thermal oxidizers to control emissions from enamel curing, and

exhausting to stacks identified with the same names as their respective emission units.

(h) Eight (8) Department 300 Emission Units, identified as units 301E, 301W, 302E, 302W, 303E, 303W, 304E, and 304W constructed in 1994. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(i) Twelve (12) Department 300 Emission Units, identified as units 305E, 305W, 306E, 306W, 309E, 309W, 310E, 310W, 311E, 311W, 312E, and 312W, each constructed in 1996. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

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(k) Eight (8) Department 300 Emission Units, identified as units 313E, 313W, 314E, 314W, 315E, 315W, 316E, and 316W constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

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

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

D.1.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR Part 63, Subpart A] [Table 2 to 40 CFR Part 63, Subpart MMMM]

(a) The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, apply to the magnet wire emission units except when otherwise specified in 40 CFR Part 63, Subpart MMMM. The Permittee shall comply with these requirements on and after January 2, 2004.

(b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition.

D.1.2 National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products [40 CFR Part 63, Subpart MMMM] [40 CFR 63.3882] [40 CFR 63.3883] [40 CFR 63.3890]

(a) The provisions of 40 CFR Part 63, Subpart MMMM (National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products) apply to the affected source (as defined in (c) below). A copy of this rule is available on the US EPA Air Toxics Website at http://www.epa.gov/ttn/atw/misc/miscpg.html. Pursuant to 40 CFR 63.3883, the Permittee must comply with these requirements on and after January 2, 2007.

(b) Since the applicable requirements associated with the compliance options are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition.

(c) The affected source is the collection of all of the items listed in 40 CFR 63.3882, paragraphs (b)(1) through (b)(4), that are used for surface coating of miscellaneous metal parts and products within each subcategory as defined in 40 CFR 63.3881(a), paragraphs (2) through (6), which include:

(1) All coating operations as defined in 40 CFR 63.3981;

(2) All storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed;

(3) All manual and automated equipment and containers used for conveying coatings thinners and/or other additives, and cleaning materials; and

(4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

(d) Terminology used in this section are defined in the Clean Air Act, in 40 CFR Part 63, Section 63.2, and in 40 CFR 63.3981, which are incorporated by reference.

D.1.3 Prevention of Significant Deterioration - BACT [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 and PSD SSM 083-21221-00008:

(a) VOC emissions from the enamel curing subsection of magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall be controlled by an oxidizer with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the integral thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(b) VOC emissions from the lubricant coating subsection of magnet wire coating units 201E and 201W through 212E and 212W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(c) The total VOC emissions from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall not exceed 453 tons per year.

Compliance with these limits will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) with respect to VOC for the affected units.

D.1.4 Volatile Organic Compounds [326 IAC 8-2-8]

(a) Pursuant to 326 IAC 8-2-8 (Magnet Wire Coating Operations), the owner or operator shall not allow the discharge into the atmosphere of VOC in excess of 1.7 pounds VOC per gallon of coating, excluding water, as delivered to the applicator.

(b) Pursuant to 326 IAC 8-1-2 (b), the magnet wire emission units' VOC emissions shall be limited to no greater than the equivalent emissions, expressed as pounds of VOC per gallon of coating solids, allowed in (a).

This equivalency was determined by the following equation:

$E = L / (1 - (L/D))$

where:

L = Applicable emission limit from 326 IAC 8 in pounds of VOC per gallon of coating
D = Density of VOC in coating in pounds per gallon of VOC
E = Equivalent emission limit in pounds of VOC per gallon of coating solids as applied.

Actual solvent density shall be used to determine compliance of the surface coating operation using the compliance methods in 326 IAC 8-1-2 (a).

(c) The equivalent pounds of VOC per gallon of coating solids as applied (E) shall be limited to less than 2.21, when L is equal to 1.7 and D is equal to 7.36.

(d) Pursuant to 326 IAC 8-1-2(c):

(1) The overall control efficiency of the thermal oxidizers controlling units 201E and 201W through 216E and 216W shall be no less than 96.0%; and

(2) The overall control efficiency of the thermal oxidizers controlling units 301E and 301W through 316E and 316W shall be no less than 97.8%.

The overall control efficiency (O) was calculated by the following equation:

$$O = \frac{V - E}{V} \times 100$$

where:

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

Compliance with Condition D.1.3 will ensure compliance with the requirements of 326 IAC 8-2-8.

D.1.5 Clean Unit [326 IAC 2-2.2]

(a) Pursuant to 326 IAC 2-2.2, the following units are designated as Clean Units for VOC:

(1) The enamel coating subsections of magnet wire coating units 213E and 213W through 216E and 216W;

(2) The enamel coating subsections of magnet wire coating units 301E and 301W through 316E and 316W; and

(3) The enamel and lubricant coating subsections of magnet wire coating units 201E and 201W through 212E and 212W.

(b) Pursuant to 326 IAC 2-2.2-1(d), the effective date of each unit's Clean Unit designation is the date the emissions unit's air pollution control technology is placed into service or three (3) years after the issuance of the respective major NSR permit, whichever is earlier.

(c) In order to maintain the clean unit designations for the units identified in (a) above:

(1) The Permittee shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit; and

(2) No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.

(d) The clean units designated in (a) above are subject to the following requirements:

(1) Any project at these emissions units for which actual construction/modification begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.

(2) If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.

(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.

(4) A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).

D.1.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

Compliance Determination Requirements

D.1.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-2][326 IAC 2-2]

(a) Pursuant to 326 IAC 8-1-2(a), the Permittee shall operate the integral thermal oxidizers at all times the respective facilities are in operation to achieve compliance with Conditions D.1.3 and D.1.4.

(b) Compliance with Condition D.1.3 shall be determined using the following equation:

$$VOC_t = [(VOC_{iem} + VOC_{ilm}) \times (1 - DE_2/100)] + [(VOC_{ie2}) \times (1 - DE_2/100)] + VOC_{il2} + [VOC_{ie3} \times (1 - DE_3/100)] + VOC_{il3} + VOC_c$$

Where:

VOC_t = Total VOC emissions (ton/month) from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W for a given calendar month.

VOC_{iem} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 201E and 201W through 212E and 212W for a given calendar month

VOC_{ilm} = Total VOC input (ton/month) to the lubricant coating subsection of units 201E and 201W through 212E and 212W for a given calendar month

DE_2 = The destruction efficiency (%) of the Department 200 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{ie2} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 213E and 213W through 216E and 216W for a given calendar month (ton/mo.)

VOC_{il2} = Total VOC input (ton/month) to the lubricant coating subsection of units 213E and 213W through 216E and 216W for a given calendar month.

VOC_{ie3} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 301E and 301W through 316E and 316W for a given calendar month.

DE_3 = The destruction efficiency (%) of the Department 300 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{il3} = Total VOC input (ton/month) to the lubricant coating subsection of units 301E and 301W through 316E and 316W for a given calendar month.

VOC_c = Total VOC from cleanup solvent used in conjunction with units 201E and 201W through 216E and 216W and 301E and 301W through 316E for a given calendar month.

D.1.8 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) The Permittee shall conduct performance tests (as described in (b), (c) and (d) below) to verify the VOC control efficiency requirements in Conditions D.1.3 and D.1.4.

(b) No later than January 11, 2010, the Permittee shall test one (1) integral thermal oxidizer from magnet wire coating units 213E/W through 216E/W that has not been tested in the past ten (10) years. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

(c) No later than September 22, 2009, the Permittee shall test three (3) integral thermal oxidizers from magnet wire coating units 301E/W through 316E/W that have not been tested in the past ten (10) years. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

(d) No later than 180 days after the issuance of SSM 083-21221-00038, the Permittee shall test two (2) integral thermal oxidizers and two (2) lubricant coating subsection capture devices from magnet wire coating units 201E/W through 212E/W that have not been tested in the past ten (10) years. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

D.1.9 Thermal Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer for measuring operating temperature of the integral thermal oxidizer. For the purposes of this condition, continuous monitoring shall mean no less often than once per minute. The output of this system shall be recorded as an hourly average.

(b) If the continuous monitoring system is not in operation, the temperature will be recorded manually once in a 15-minute period or in any other IDEM-approved manner. Nothing in this permit shall excuse the Permittee from complying with the requirement to continuously monitor the temperature of the integral thermal oxidizer.

(c) From the date of issuance of this permit until the results from the approved stack tests, required by Condition D.1.8, are available, the Permittee shall operate the thermal oxidizer at or above the minimum hourly average temperature of 1350^{o}F.

(d) Once the results from the approved stack tests are available, the Permittee shall determine the minimum hourly average temperature that demonstrates compliance with the limits in Conditions D.1.3 and D.1.4, as approved by IDEM. The Permittee shall then operate the thermal oxidizer at or above the minimum hourly average temperature determined from the most recent compliant stack test following approval of that temperature.

(e) The oxidizer shall operate with a five (5) degree buffer such that if an eight-hour average temperature falls within five degrees Fahrenheit (5 ^{o}F) of the minimum required temperature, corrective action shall be performed and one-hour average temperatures shall be investigated to determine if any temperature fell below the actual minimum temperature. If a one-hour average temperature is less than the established minimum temperature, the Permittee shall take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. An hourly average temperature that is below the minimum hourly average temperature is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

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

D.1.10 National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products - Notifications [40 CFR 63.3910]

(a) The Permittee must submit the applicable notifications in 40 CFR 63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (e) and (h) by the dates specified in those sections, except as provided in paragraphs (b) and (c) below.

(b) The Permittee must submit the Initial Notification required by 40 CFR 63.9(b) and 40 CFR 63.3910(b) no later than January 2, 2005.

(c) The Permittee must submit the Notification Of Compliance Status required by 40 CFR 63.9(h) and 40 CFR 63.3910(c) no later than March 1, 2008. The notification of compliance status must contain the information specified in 40 CFR 63.3910(c) paragraphs (1) through (11) and any additional information specified in 40 CFR 63.9(h).

(d) All notifications, required by (a) through (c) above, must be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 Jackson Boulevard
Chicago, Illinois 60604-3590

D.1.11 Record Keeping Requirements

(a) To document compliance with Conditions D.1.3 and D.1.4, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC usage and content limits established in Conditions D.1.3 and D.1.4. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(1) The VOC content of each coating material and solvent used less water.

(2) The amount of coating material and solvent used on a monthly basis.

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

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

(3) The total VOC usage for each month.

(4) The oxidizer temperature (reduced to 1-hour block averages), as read by the continuous monitor or IDEM-approved manner, and the hourly average temperature used to demonstrate compliance during the most recent compliant stack test.

(b) To document compliance with Condition D.1.6, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.

(c) To document compliance with Condition D.1.8, the Permittee shall maintain records of the test results.

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

D.1.12 Requirement to Submit a Permit Modification Application [326 IAC 2-7-12] [326 IAC 2-7-5]

(a) The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information from the Notification Of Compliance Status (NOCS) in the Title V permit.

(1) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Title V permit the applicable requirements of 40 CFR 63, Subpart MMMM a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.

(2) The significant permit modification application shall be submitted no later than April 2, 2006 and shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

(b) The Permittee shall submit an application for a Part 70 permit modification to the IDEM, OAQ to include the effective and expiration dates for all the Clean Units into the Title V permit.

(1) The permit modification application shall be consistent with 326 IAC 2-7-12.

(2) The permit modification application shall be submitted no later than sixty (60) days following the installation of the new control devices and shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

D.1.13 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.3(c) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Copper Rod and Bar Manufacturing Process

(l) One (1) Copper Rod and Bar Manufacturing Process, identified as P-1, constructed in 1976, a maximum capacity of 20 tons of copper per hour, with emissions uncontrolled, exhausting to stack S-1, and consisting of:

(1) One (1) natural gas-fired vertical melt furnace, with a heat input capacity of 24 MMBtu/hr,

(2) One (1) holding furnace, with a heat input capacity of 2.0 MMBtu/hr,

(3) One (1) tundish, with a heat input capacity of 1.5 MMBtu/hr, and

(4) Various ancillary launders, with an aggregate heat input capacity of 2.5 MMBtu/hr.

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

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

D.2.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate emission rate from the copper rod and bar manufacturing process (identified as P-1) shall not exceed 30.51 pounds per hour when operating at a process weight rate of 20 tons per hour.

The pound per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.2.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

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

D.2.3 Visible Emissions Notations

(a) Visible emission notations of the exhaust from the copper rod and bar manufacturing process (exhausting to stack S-1) shall be performed once per shift during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

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

D.2.4 Record Keeping Requirements

(a) To document compliance with Condition D.2.3, the Permittee shall maintain once per shift records of the visible emission notations.

(b) To document compliance with Condition D.2.2, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Alcohol Quench Process and Storage Tanks

(m) One (1) mill emulsion system identified as P-2 Mill Emulsion System, constructed in 1976, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume Isopropyl Alcohol (2-propanol) through sprays in an enclosed rolling mill stand area, with emissions uncontrolled, and exhausting to stack/vent V-1;

(n) One (1) quench system identified as P-2 Quench System, constructed in 1976, which pumps a quench solution containing 0.8% - 3.0% by volume Isopropyl Alcohol (2-propanol) ejectors into tubes, with emissions uncontrolled, and exhausting to stack/vent V-2;

The maximum capacity of the P-2 Alcohol Quench Process (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-propanol (IPA) per hour.

(o) One (1) 15,000 gallon mill emulsion storage tank, constructed in 1995;

(p) One (1) 7,500 gallon quench solution storage tank, constructed in 1978.

(q) Two (2) 7,000 gallon isopropyl storage tanks, constructed in 1988.

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

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

D.3.1 Standards for Vessels [326 IAC 12]

Pursuant to 326 IAC 12 and 326 IAC 1-1-3, the Permittee shall maintain readily available records showing the dimensions of the 15,000 gallon mill emulsion storage tank and an analysis showing its capacity. This requirement will remain in effect until 326 IAC 12 and 326 IAC 1-1-3 are revised to incorporate the October 15, 2003, or later, version of 40 CFR Part 60, Subpart Kb.

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

D.3.2 Record Keeping Requirements

To document compliance with Condition D.3.1, the Permittee shall keep readily accessible records showing the dimension of the storage tanks and an analysis showing the capacity of the storage tanks.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Branch

Part 70 Quarterly Report

Source Name: Essex Group, Inc., Vincennes plant
Source Address: 1299 East Essex Road, Vincennes, IN, 47591
Mailing Address: 1299 East Essex Road, Vincennes, IN, 47591
Part 70 Permit No.: T083-7422-00008
Facilities: 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W
Parameter: Total VOC emissions
Limit: 453 tons of VOC per year. Monthly VOC emissions shall be determined with the following equation (see Condition D.1.7 of the permit for a description of the variables):

$$VOC_t = [(VOC_{iem} + VOC_{ilm}) \times (1 - DE_2/100)] + [(VOC_{ie2}) \times (1 - DE_2/100)] + VOC_{il2} + [VOC_{ie3} \times (1 - DE_3/100)] + VOC_{il3} + VOC_c$$

YEAR:

Month	Total VOC Emissions This Month	Total VOC Emissions from Past 11 Months	Total VOC Emissions (12 Month Total)
Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Prevention of Significant Deterioration (PSD) and Part 70 Significant Source Modification and Significant Permit Modification

Source Background and Description

Source Name:	Essex Group, Inc.- Vincennes plant
Source Location:	1299 East Essex Road, Vincennes, IN, 47591
County:	Knox
SIC Code:	3351 and 3357
Operation Permit No.:	T083-7422-00008
Operation Permit Issuance Date:	May 3, 2004
Significant Source Modification No.:	083-21221-00008
Significant Permit Modification No.:	083-21551-00008
Permit Reviewer:	ERG/BS

The Office of Air Quality (OAQ) has reviewed an application for a PSD Significant Source Modification and Significant Permit Modification to a Part 70 permit from Essex Group, Inc. ("Essex") relating to:

(a) An increase in the production capacity of sixteen (16) existing magnet wire coating units: 201E and 201W through 208E and 208W. The existing capacity is 658 pounds of copper wire per hour, per unit. The new capacity is 900 pounds of copper wire per hour, per unit.

(b) An increase in the production capacity of eight (8) existing magnet wire coating units: 209E and 209W through 212E and 212W. The existing capacity is 527 pounds of copper wire per hour, per unit. The new capacity is 658 pounds of copper wire per hour, per unit.

(c) The addition of ten (10) wire annealers to magnet wire coating units 201E and 201W through 203E and 203W, 206E and 206W through 208E and 208W and 209E and 209W through 212E and 212W. Currently, each E/W pair shares a common annealer. After the modification, each unit will have its own annealer. The annealer additions allow Essex greater flexibility in oven scheduling, reduced downtime, reduced scrap generation and greater energy use efficiency.

(d) The addition of emission capture devices on the lubricant coating subsections of units 201E and 201W through 212E and 212W. Emissions captured by the devices will be routed to, and destroyed by, integral thermal oxidizers.

Note that the source has requested that two (2) existing 7,000 gallon isopropyl storage tanks be included in the permit for completeness. These tanks are insignificant and not regulated so they are not addressed further.

Enforcement Issue

Pursuant to Condition D.1.3 of T083-7422-00008, issued May 3, 2004, the integral thermal oxidizers must operate with a destruction efficiency of at least 98.5%. On September 22, 2004, Essex completed stack testing in order to determine the VOC destruction efficiency of the oxidizers. Upon review of the stack test results by IDEM, OAQ personnel, the OAQ determined that unit 209W had an average measured destruction efficiency of ninety-six and seven tenths

percent (96.7%). Results from retesting completed on January 11, 2005 indicated compliance with the 98.5 destruction efficiency requirement. The IDEM, OAQ is reviewing this matter and will take appropriate action.

Recommendation

The staff recommends to the Commissioner that the Part 70 PSD Significant Source Modification and Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

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 May 3, 2005.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Air Pollution Control Justification as an Integral Part of the Process

Pursuant to T083-7422-00008, issued May 3, 2004, the thermal oxidizers (that control VOC emissions from the magnet wire coating units) are integral; i.e. considered part of the process.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the net emissions increase of the modification after integral controls – See Appendix A for the respective emission calculations. Control equipment is considered federally enforceable because it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	less than 25
PM-10	less than 15
SO_2	less than 40
VOC	less than 40
CO	less than 100
NO_x	less than 40

NOTE: As the above table indicates, the net emissions increase of the modification is less than the relevant PSD major modification thresholds. Therefore, the modification would not be subject to 326 IAC 2-2 as a result of the level of emissions increase. However, in order to accommodate the capacity increase of the magnet wire coating units, the VOC PSD BACT limits originally established in T083-7422-00008, issued May 3, 2004, must be revised. As a result, this modification is subject to the requirements of 326 IAC 2-2. See the *State Rule Applicability – 326 IAC 2-2* section of this document for more information.

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Significant Source Modification, pursuant to 326 IAC 2-7-10.5(f)(1) and (f)(4), because the modification is subject to 326 IAC 2-2 and it's potential to emit VOC is greater than 25 tons per year. The Part 70 Operating permit is being modified through a Part 70 Significant Permit Modification, pursuant to 326 IAC 2-7-

12(d)(1), because the modification involves a significant change to an existing Part 70 term or condition.

County Attainment Status

The source is located in Knox County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_x	Attainment
1-hr and 8-hr Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) 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 emissions and NOx are considered when evaluating the rule applicability relating to ozone. Knox County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)). See the *State Rule Applicability – 326 IAC 2-2* section of this document for more information.

(b) Knox County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD) for PM 2.5 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 surrogate for PM2.5 emissions.

(c) Knox County has been classified as attainment or unclassifiable for PM10, SO2, NOx, CO and lead. Therefore, these emissions were reviewed pursuant to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)).

(d) Fugitive Emissions
Since this type of operation is not in one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD applicability.

Source Status

Existing Source PSD Definition (pursuant to the Technical Support Document of T083-7422-00008, issued May 3, 2004; emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	less than 100
PM10 / PM2.5	less than 100
SO_2	less than 100
VOC	greater than 250
CO	less than 100
NOx	less than 100

This existing source is a major PSD stationary source because the potential to emit of at least one attainment regulated pollutant is greater than 250 tons per year.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Magnet Wire Coating Units 201E/W – 208E/W **(modified)**	2.98 [(a)]	2.98 [(a)]	0.24 [(a)]	453 [(b)]	33 [(a)]	39 [(a)]	Greater than 25
Magnet Wire Coating Units 209E/W – 212E/W **(modified)**							
Magnet Wire Coating Units 213E/W – 216E/W [(b)]							
Magnet Wire Coating Units 301E/W – 316E/W [(b)]							
TOTAL	2.98	2.98	0.24	453	33	39	Greater than 25
PSD Significance Level [(c)]	25	15	40	40	100	40	NA

(a) Represents emissions from natural gas combustion in the magnet wire coating units' integral thermal oxidizers. The modification does not affect the operating temperature or destruction efficiency of the oxidizers so there is no change in PM/PM10, SO2, NOx and CO emissions with respect to this modification.
(b) Magnet wire coating units 213E/W through 216E/W and 301E/W through 316E/W are not involved in this source modification. The emissions from these units are presented for completeness because the PSD BACT emission limit of 453 tons of VOC per year from T083-7422-00008, issued May 3, 2004, has not been changed and addresses all of the magnet wire coating units at the source. As a result, the allowable VOC emission increase of this modification is zero (0) tons per year. See the *State Rule Applicability – 326 IAC 2-2* section of this document for more information.
(c) See Appendix A and the *Potential to Emit of the Modification* section of this document regarding the modification's PTE with respect to triggering PSD applicability. The PTE totals presented in the table above are not the net change in emissions for those pollutants and should not be compared to the PSD Significance Levels presented.

Federal Rule Applicability

(a) The requirements of 326 IAC 20 and 40 CFR Part 63, Subpart SSSS (National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil) are not included in the permit. Pursuant to 40 CFR 63.5110, metal coil is defined as "a continuous metal strip" (with a thickness) and the magnet wire coated at this source is not a strip, but a cylindrical piece (with a diameter).

(b) The requirements of 326 IAC 12 and 40 CFR Part 60, Subpart TT (New Source Performance Standards: Surface Coating of Metal Coil) are not included in the permit. Pursuant to 40 CFR 60.461, metal coil is defined as "a continuous metal strip" (with a thickness) and the magnet wire coated at this source is not a strip, but a cylindrical piece (with a diameter).

(c) The magnet wire coating units are subject to the requirements of 40 CFR Part 63, Subpart MMMM (National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products) because they are located at a source which is a major source of HAPs and are used for the surface coating of magnet wire. A copy of the MACT is available on the U.S. EPA website, http://www.epa.gov/ttn/atw/misc/miscpg.html. Pursuant to 40 CFR 63.3883, the Permittee must comply with these requirements on and after January 2, 2007.

The Part 70 permit contains conditions addressing the requirements of 40 CFR Part 63, Subpart MMMM. These conditions have not changed as a result of the modification.

(d) The magnet wire coating units are not subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). In order for this rule to apply, a pollutant-specific-emissions-unit at a source that requires a Part 70 or Part 71 permit must meet three criteria for a given pollutant: 1) the unit is subject to an applicable emission limitation or standard for the applicable regulated air pollutant, 2) the unit uses a control device to achieve compliance with any such emission limitation or standard, and 3) the unit has the potential to emit, of the applicable regulated air pollutant, equal or greater than 100 percent of the amount required for a source to be classified as a major source. The magnet wire coating units do not meet these criteria and therefore, are not subject to 40 CFR Part 64 (CAM).

State Rule Applicability - Entire Modification

326 IAC 2-2 (Prevention of Significant Deterioration)

This source consists of two divisions, a Concast division, constructed in 1976, which produces copper rod and bars, and a Magnet Wire division, originally constructed in 1967, which processes the copper products from the Concast division into coated copper wire. The Magnet Wire Division is divided into two departments, Department 200 and 300. Each department contains 32 magnet wire coating units. This modification only affects units 201E and 201W through 212E and 212W.

This source is located in Knox County which is designated as attainment or unclassifiable for all criteria pollutants. The net emissions increase of the modification is less than the relevant PSD major modification thresholds. Therefore, the modification would not trigger PSD based on the level of emissions increase. However, in order to accommodate the capacity increase of the magnet wire coating units, the VOC PSD BACT limits originally established in T083-7422-00008, issued May 3, 2004, must be revised. As a result, this modification is subject to the requirements of 326 IAC 2-2.

The PSD provisions require that this modification be reviewed to ensure compliance with the National Ambient Air Quality Standards and to apply the requirements of 326 IAC 2-2. Specifically, 326 IAC 2-2-3 requires the determination and implementation of BACT, 326 IAC 2-2-4 and 326 IAC 2-2-5 require the evaluation of the modification's impact on air quality, 326 IAC 2-2-6 requires an assessment of increment consumption and 326 IAC 2-2-7 requires an evaluation of additional impacts.

326 IAC 2-2-3 (PSD: Best Available Control Technology)
For the purpose of evaluating VOC emissions, each magnet wire coating unit consists of two subsections, an enamel curing subsection (using integral thermal oxidization for VOC control) and a lubricant coating subsection (no controls). Pursuant to 326 IAC 2-2-3, BACT for VOC has been evaluated and determined for each of these subsections; see Appendix B for more information. Note that an economic analysis of the various control options was not completed since BACT has been determined to be the control option with the greatest emission reduction potential.

With respect to this modification, the requirement to comply with the provisions of 326 IAC 2-2 does not include 326 IAC 2-2-4 (Air Quality Analysis), 326 IAC 2-2-5 (Air Quality Impact), 326 IAC 2-2-6 (Increment Consumption) and 326 IAC 2-2-7 (Additional Analyses) because: 1) the existing allowable post-BACT VOC emission rate of 453 tpy has not changed, and 2) no ozone increment exists.

As Appendix B indicates, BACT for VOC for the respective magnet wire coating units is the capture and destruction of VOC emissions from the enamel curing and lubricant coating subsections. In order to clarify the existing and new BACT requirements, accommodate the modification, allow for optimal operational flexibility, and maintain the existing 453 tpy VOC emission limit, the existing BACT requirements (pursuant to T083-7422-00008, issued May 3, 2004) have been changed from:

"Pursuant to 326 IAC 2-2-3, BACT for magnet wire emission units 201E and 201W through 216E and 216W has been determined to be the following:

(a) The integral thermal oxidizers shall control VOC emissions from the magnet wire emission units and achieve a minimum one-hundred percent (100%) capture

efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M) and ninety-eight and five tenths percent (98.5%) destruction efficiency.

(b) The total VOC delivered by the coating applicators prior to drying/curing with integral thermal oxidization shall not exceed 9228 tons per twelve consecutive month period with compliance determined at the end of each month.

(c) The total VOC input used after the drying/curing with integral thermal oxidization shall not exceed 314 tons per twelve consecutive month period with compliance determined at the end of each month.

(d) The total VOC emissions shall not exceed 453 tons per year. Compliance with (a) through (c) above will ensure compliance with this limit.

Compliance with these limitations will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration)."

To:

"Pursuant to 326 IAC 2-2-3 and PSD SSM 083-21221-00008:

(a) VOC emissions from the enamel curing subsection of magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the integral thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(b) VOC emissions from the lubricant coating subsection of magnet wire coating units 201E and 201W through 212E and 212W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(c) The total VOC emissions from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall not exceed 453 tons per year.

Compliance with these limits will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) with respect to VOC for the affected units."

Note that the BACT limitation included in T083-7422-00008, issued May 3, 2004 erroneously omitted a reference to units 301E and 301W through 316E and 316W. It is clear from the TSD and ATSD for that permit that units 301E and 301W through 316E and 316W are covered by the BACT limitation and were meant to be included. This modification corrects that omission.

All of the magnet wire coating units located at this source are covered by the 453 ton per year VOC emission limit. VOC emissions from each unit are the product of VOC input to each subsection (enamel curing and lubricant coating subsections) and the overall control efficiency of that subsection. Note that all of the units are not subject to the same requirements. For example, the VOC emissions from the lubricant subsections of units 213E and 213W through 216E and 216W are not subject to any control efficiency requirements; whereas the rest of the Department 200 units are subject to control requirements. As a result, IDEM has developed the following equation by which the Permittee can precisely determine compliance with the 453 ton per year limit:

$$VOC_t = [(VOC_{iem} + VOC_{ilm}) \times (1 - DE_2/100)] + [(VOC_{ie2}) \times (1 - DE_2/100)] + VOC_{il2} + [VOC_{ie3} \times (1 - DE_3/100)] + VOC_{il3} + VOC_c$$

Where:

VOC_t = Total VOC emissions (ton/month) from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W for a given calendar month.

VOC_{iem} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 201E and 201W through 212E and 212W for a given calendar month

VOC_{ilm} = Total VOC input (ton/month) to the lubricant coating subsection of units 201E and 201W through 212E and 212W for a given calendar month

DE_2 = The destruction efficiency (%) of the Department 200 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{ie2} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 213E and 213W through 216E and 216W for a given calendar month (ton/mo.)

VOC_{il2} = Total VOC input (ton/month) to the lubricant coating subsection of units 213E and 213W through 216E and 216W for a given calendar month.

VOC_{ie3} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 301E and 301W through 316E and 316W for a given calendar month.

DE_3 = The destruction efficiency (%) of the Department 300 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{il3} = Total VOC input (ton/month) to the lubricant coating subsection of units 301E and 301W through 316E and 316W for a given calendar month.

VOC_c = Total VOC from cleanup solvent used in conjunction with units 201E and 201W through 216E and 216W and 301E and 301W through 316E for a given calendar month.

326 IAC 2-2.2 (Emission Units Designated as Clean Units)

Pursuant to 326 IAC 2-2.2, the following units are designated as Clean Units for VOC:

(a) The enamel coating subsections of magnet wire coating units 213E and 213W through 216E and 216W;

(b) The enamel coating subsections of magnet wire coating units 301E and 301W through 316E and 316W; and

(c) The enamel and lubricant coating subsections of magnet wire coating units 201E and 201W through 212E and 212W.

These units have been designated as Clean Units under 326 IAC 2-2 because:

(a) They have been reviewed under the PSD program (326 IAC 2-2) for VOC; and

(b) They achieved reductions in emissions by using add-on control or implementing work practices (with respect to VOC); and

(c) The owner/operator made an investment to install the control technology, research the application of pollution prevention technique to the emission unit, or apply pollution prevention to the emission unit with respect to VOC.

Pursuant to 326 IAC 2-2.2-1(d), the effective date of each unit's Clean Unit designation is the date the emissions unit's air pollution control technology is placed into service or three (3) years after

the issuance of the major NSR permit, whichever is earlier. Pursuant to 326 IAC 2-2.2-1(e), each unit's Clean Unit designation will expire 10 years after the issuance date of the respective major NSR permit or at any time the owner or operator fails to comply with the provisions for maintaining the clean unit designation in 326 IAC 2-2.2-1(g).

Pursuant to 326 IAC 2-2.2-1(f), after the effective date of the Clean Unit designation, but no later than when the Part 70 permit is renewed, the Part 70 permit must include the effective and expiration Clean Unit dates for each designated unit. IDEM can not specify all the effective and expiration dates as the capture devices on the lubricant coating subsections of the respective units have not yet been installed. The Part 70 permit (T083-7422-00008) expires on May 3, 2009. As a result, the Permittee shall submit an application for a Part 70 permit modification to the IDEM, OAQ to include the effective and expiration dates for all the Clean Units into the Title V permit.

(a) The permit modification application shall be consistent with 326 IAC 2-7-12.

(b) The permit modification application shall be submitted no later than sixty (60) days following the issuance of this permit and shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

326 IAC 2-3 (Emission Offset)

Knox County is designated as attainment or unclassifiable for all criteria pollutants. Therefore, the requirements of 326 IAC 2-3 do not apply to this modification.

326 IAC 2-4.1 (Hazardous Air Pollutants)

This modification does not involve the construction or reconstruction of a major source of hazardous air pollutants. Therefore, pursuant to 326 IAC 2-4.1-1, this modification is not subject to the requirements of 326 IAC 2-4.1.

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:

(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.

326 IAC 6-3-2 (Particulate Emission Limitations from Manufacturing Processes)

Particulate emissions from the magnet wire coating operation result from the combustion of natural gas in the thermal oxidizers. The magnet wire coating operations are not subject to the requirements of 326 IAC 6-3-2 because, pursuant to 326 IAC 6-3-1(b)(14), each magnet wire emission unit emits significantly less than 0.551 pounds of particulate per hour.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

None of the facilities associated with this modification have the potential to emit greater than or equal to 25 tons of SO2 per year. Therefore, the requirements of 326 IAC 7-1.1 do not apply to any of the facilities associated with this modification.

326 IAC 8-2-8 (Magnet Wire Coating Operations)

The magnet wire coating units are located in Knox county and have actual pre-control VOC emissions greater than 15 pounds per day. As a result, the magnet wire emission units are subject to the requirements of 326 IAC 8-2-8.

The volatile organic compound (VOC) content of electrically insulating varnishes or enamel applied to aluminum or copper wire for use in electrical machinery shall be limited to 1.7 pounds VOC per gallon of coating less water delivered to the applicator.

This limit includes the evaporation of thinners being added to coatings to adjust viscosity, therefore, it is necessary to keep coating and solvent containers covered at all times to prevent solvent evaporation.

The integral thermal oxidizers associated with facilities 201E and 201W through 212E and 212W shall operate with an overall efficiency of at least 96.0%.

The overall efficiency is necessary to ensure compliance with 326 IAC 8-2-8.

326 IAC 8-1-6 (Volatile Organic Compounds - BACT)

All sixty-four (64) magnet wire emission units are subject to 326 IAC 8-2-8. Therefore, 326 IAC 8-1-6 is not applicable to these facilities.

Testing Requirements

In order to comply with the established requirements, the thermal oxidizers and capture devices for the respective magnet wire coating units must operate at or above the specified minimum efficiencies. Therefore, VOC performance testing is required to verify these efficiencies. Note that the magnet wire emission units in Department 200 vary slightly from those Department 300 units. All oxidizers in both departments must maintain a minimum control efficiency of at least 98.5% to satisfy the requirements of 326 IAC 2-2. As a result, the testing listed in the permit requires testing of a representative number of Department 200 and Department 300 units.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

Proposed Changes

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

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

Magnet Wire Production - Departments 200 and 300

(~~ea~~) Two (2) Department 200 Emission Units, identified as units 201E and 201W, each

constructed in 1989 and modified in 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~f~~**b**) Four (4) Department 200 Emission Units, identified as units 202E, 202W, 203E, and 203W, each constructed in 1993 and modified in 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~h~~**c**) Six (6) Department 200 Emission Units, identified as units 204E, 204W, 205E, 205W, 206E, and 206W, each constructed in 1995 and modified in 1997 or 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator. ~~204E, 204W, 205W, and 205W each use an separate annealer, whereas 206E and 206W share an annealer.~~ Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~g~~**d**) Four (4) Department 200 Emission Units, identified as units 207E, 207W, 208E, **and** 208W, constructed in 1994 and modified in 1997 **and 2005**. Each Emission Unit consists of **one (1) annealer**, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~b~~**e**) ~~Twelve (12)~~ **Eight (8)** Department 200 Emission Units, identified as units 209E, 209W, 210E, 210W, 211E, 211W, 212E, **and** 212W, ~~213E, 213W, 214E, 214W,~~ each constructed in 1998 **and modified in 2005**. Each Emission Unit consists of **one (1) annealer**, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~527~~ **658** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(f) Four (4) Department 200 Emission Units, identified as units 213E, 213W, 214E, and 214W, each constructed in 1998. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour. Emissions from enamel curing are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~a~~**g**) Four (4) Department 200 Emission Units, identified as units 215E, 215W, 216E, 216W, each constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour, using integral thermal oxidizers **to control emissions from**

enamel curing, **and** exhausting to stacks identified with the same names as their respective emission units.

(~~i~~**h**) Eight (8) Department 300 Emission Units, identified as units 301E, 301W, 302E, 302W, 303E, 303W, 304E, and 304W constructed in 1994. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~c~~**i**) Twelve (12) Department 300 Emission Units, identified as units 305E, 305W, 306E, 306W, 309E, 309W, 310E, 310W, 311E, 311W, 312E, and 312W, each constructed in 1996. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(j) Four (4) Department 300 Emission Units, identified as units 307E, 307W, 308E, and 308W constructed in 1995. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~d~~**k**) Eight (8) Department 300 Emission Units, identified as units 313E, 313W, 314E, 314W, 315E, 315W, 316E, and 316W constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

Copper Rod and Bar Production

(~~k~~**l**) One (1) Copper Rod and Bar Manufacturing Process, identified as P-1, constructed in 1976, a maximum capacity of 20 tons of copper per hour, with emissions uncontrolled, exhausting to stack S-1, and consisting of:

(1) One (1) natural gas-fired vertical melt furnace, with a heat input capacity of 24 MMBtu/hr,

(2) One (1) holding furnace, with a heat input capacity of 2.0 MMBtu/hr,

(3) One (1) tundish, with a heat input capacity of 1.5 MMBtu/hr, and

(4) Various ancillary launders, with an aggregate heat input capacity of 2.5 MMBtu/hr.

Alcohol Quench Process

(~~l~~**m**) One (1) mill emulsion system identified as P-2 Mill Emulsion System, constructed in 1976, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume Isopropyl Alcohol (2-propanol) through sprays in an enclosed rolling mill stand area, with emissions uncontrolled, and exhausting to stack/vent V-1;

(~~m~~**n**) One (1) quench system identified as P-2 Quench System, constructed in 1976, which pumps a quench solution containing 0.8% - 3.0% by volume Isopropyl Alcohol (2-propanol) ejectors into tubes, with emissions uncontrolled, and exhausting to stack/vent V-2;

The maximum capacity of the P-2 Alcohol Quench Process (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-propanol (IPA) per hour.

Storage Tanks

(~~n~~**o**) One (1) 15,000 gallon mill emulsion storage tank, constructed in 1995;

(~~o~~**p**) One (1) 7,500 gallon quench solution storage tank, constructed in 1978.

(q) Two (2) 7,000 gallon isopropyl storage tanks, constructed in 1988.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Magnet Wire Emission Units

Magnet Wire Production - Department 200

(~~e~~**a**) Two (2) Department 200 Emission Units, identified as units 201E and 201W, each constructed in 1989 and modified in 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~f~~**b**) Four (4) Department 200 Emission Units, identified as units 202E, 202W, 203E, and 203W, each constructed in 1993 and modified in 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~h~~**c**) Six (6) Department 200 Emission Units, identified as units 204E, 204W, 205E, 205W, 206E, and 206W, each constructed in 1995 and modified in 1997 or 1998 **and 2005**. Each Emission Unit consists of **one (1) annealer,** one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator. ~~204E, 204W, 205W, and 205W each use an separate annealer, whereas 206E and 206W share an annealer.~~ Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~g~~**d**) Four (4) Department 200 Emission Units, identified as units 207E, 207W, 208E, **and** 208W, constructed in 1994 and modified in 1997 **and 2005**. Each Emission Unit consists of **one (1) annealer**, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~658~~ **900** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~b~~**e**) ~~Twelve (12)~~ **Eight (8)** Department 200 Emission Units, identified as units 209E, 209W, 210E, 210W, 211E, 211W, 212E, **and** 212W, ~~213E, 213W, 214E, 214W,~~ each constructed in 1998 **and modified in 2005**. Each Emission Unit consists of **one (1) annealer**, one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, **and** one (1) topical lube applicator ~~and each pair sharing one (1) annealing system~~. Each unit has a maximum copper wire producing capacity of ~~527~~ **658** lb copper per hour**.** ~~using~~ **Emissions from enamel curing and lubricant coating are controlled by** integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(f) **Four (4) Department 200 Emission Units, identified as units 213E, 213W, 214E, and 214W, each constructed in 1998. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour. Emissions from enamel curing are controlled by integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.**

(~~a~~**g**) Four (4) Department 200 Emission Units, identified as units 215E, 215W, 216E, 216W, each constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 527 lb copper per hour, using integral thermal oxidizers **to control emissions from enamel curing**, **and** exhausting to stacks identified with the same names as their respective emission units.

(~~i~~**h**) Eight (8) Department 300 Emission Units, identified as units 301E, 301W, 302E, 302W, 303E, 303W, 304E, and 304W constructed in 1994. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~c~~**i**) Twelve (12) Department 300 Emission Units, identified as units 305E, 305W, 306E, 306W, 309E, 309W, 310E, 310W, 311E, 311W, 312E, and 312W, each constructed in 1996. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(j) Four (4) Department 300 Emission Units, identified as units 307E, 307W, 308E, and 308W constructed in 1995. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

(~~d~~**k**) Eight (8) Department 300 Emission Units, identified as units 313E, 313W, 314E, 314W, 315E, 315W, 316E, and 316W constructed in 1997. Each Emission Unit consists of one (1) enamel applicator, one (1) curing oven, one (1) wire cooler, one (1) topical lube applicator and each pair sharing one (1) annealing system. Each unit has a maximum copper wire producing capacity of 284 lb copper per hour, using integral thermal oxidizers, exhausting to stacks identified with the same names as their respective emission units.

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

…

D.1.3 Prevention of Significant Deterioration - BACT [326 IAC 2-2-3]

~~Pursuant to 326 IAC 2-2-3, BACT for magnet wire emission units 201E and 201W through 216E and 216W has been determined to be the following:~~

~~(a) The integral thermal oxidizers shall control VOC emissions from the magnet wire emission units and achieve a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M) and ninety-eight and five tenths percent (98.5%) destruction efficiency.~~

~~(b) The total VOC delivered by the coating applicators prior to drying/curing with integral thermal oxidization shall not exceed 9228 tons per twelve consecutive month period with compliance determined at the end of each month.~~

~~(c) The total VOC input used after the drying/curing with integral thermal oxidization shall not exceed 314 tons per twelve consecutive month period with compliance determined at the end of each month.~~

~~(d) The total VOC emissions shall not exceed 453 tons per year. Compliance with (a) through (c) above will ensure compliance with this limit.~~

~~Compliance with these limitations will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration).~~

Pursuant to 326 IAC 2-2-3 and PSD SSM 083-21221-00008:

(a) VOC emissions from the enamel curing subsection of magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall be controlled by an oxidizer with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the integral thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(b) VOC emissions from the lubricant coating subsection of magnet wire coating units 201E and 201W through 212E and 212W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(c) The total VOC emissions from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall not exceed 453 tons per year.

Compliance with these limits will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) with respect to VOC for the affected units.

D.1.5 Clean Unit [326 IAC 2-2.2]

(a) Pursuant to 326 IAC 2-2.2, the following units are designated as Clean Units for VOC:

(1) The enamel coating subsections of magnet wire coating units 213E and 213W through 216E and 216W;

(2) The enamel coating subsections of magnet wire coating units 301E and 301W through 316E and 316W; and

(3) The enamel and lubricant coating subsections of magnet wire coating units 201E and 201W through 212E and 212W.

(b) Pursuant to 326 IAC 2-2.2-1(d), the effective date of each unit's Clean Unit designation is the date the emissions unit's air pollution control technology is placed into service or three (3) years after the issuance of the respective major NSR permit, whichever is earlier.

(c) In order to maintain the clean unit designations for the units identified in (a) above:

(1) The Permittee shall comply with all applicable requirements per 326 IAC 2-7 contained in this permit; and

(2) No physical change or change in the method of operation shall be undertaken at these emissions units that would allow them to operate in a manner inconsistent with the physical or operational characteristics of the emission units.

(d) The clean units designated in (a) above are subject to the following requirements:

(1) Any project at these emissions units for which actual construction/modification begins after the effective date of the clean unit designations and before the expiration date shall be considered to have occurred while the emissions units were clean units.

(2) If a project at these emission units does not cause the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT and the project would not alter any physical or operational characteristics that formed the basis for the BACT determination, the clean unit designations remain unchanged.

(3) If a project causes the need for a change in the emission limitations or work practice requirements in this permit for these units that were adopted in conjunction with BACT or the project would alter any physical or operational characteristics that formed the basis for the BACT determination, then the clean unit designations shall expire upon issuance of the necessary permit modifications, unless the units requalify as clean units. If the Permittee begins actual construction on the project without first applying to modify the emissions unit's permit, the clean unit designations shall expire immediately prior to the time when actual construction of this project begins.

(4) A project that causes emissions units to lose their clean unit designations shall be subject to the applicability requirements of 326 IAC 2-2-2(d)(1) through 326 IAC 2-2-2(d)(4) and 326 IAC 2-2-2(d)(6).

D.1.5~~6~~ Preventive Maintenance Plan [326 IAC 2-7-5(13)]

…

D.1.6~~7~~ Volatile Organic Compounds (VOC) [326 IAC 8-1-2]**[326 IAC 2-2]**

(a) Pursuant to 326 IAC 8-1-2(a), the Permittee shall operate the integral thermal oxidizers at all times the respective facilities are in operation to achieve compliance with Conditions D.1.3 and D.1.4.

(b) Compliance with Condition D.1.3 shall be determined using the following equation:

$$VOC_t = [(VOC_{iem} + VOC_{ilm}) \times (1 - DE_2/100)] + [(VOC_{ie2}) \times (1 - DE_2/100)] + VOC_{il2} + [VOC_{ie3} \times (1 - DE_3/100)] + VOC_{il3} + VOC_c$$

Where:

VOC_t = Total VOC emissions (ton/month) from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W for a given calendar month.

VOC_{iem} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 201E and 201W through 212E and 212W for a given calendar month

VOC_{ilm} = Total VOC input (ton/month) to the lubricant coating subsection of units 201E and 201W through 212E and 212W for a given calendar month

DE_2 = The destruction efficiency (%) of the Department 200 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{ie2} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 213E and 213W through 216E and 216W for a given calendar month (ton/mo.)

VOC_{il2} = Total VOC input (ton/month) to the lubricant coating subsection of units 213E and 213W through 216E and 216W for a given calendar month.

VOC_{ie3} = Total VOC input (ton/month) to the enamel coating/curing subsection of units 301E and 301W through 316E and 316W for a given calendar month.

DE_3 = The destruction efficiency (%) of the Department 300 integral thermal oxidizers as determined by the most recent compliance test.

VOC_{il3} = Total VOC input (ton/month) to the lubricant coating subsection of units 301E and 301W through 316E and 316W for a given calendar month.

VOC_c = Total VOC from cleanup solvent used in conjunction with units 201E and 201W through 216E and 216W and 301E and 301W through 316E for a given calendar month.

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

(a) ~~Within 180 days after issuance of this permit~~, **T~~t~~**he Permittee shall conduct performance tests (**as** described **in (b), (c) and (d)** below) to verify the VOC control efficiency **requirements in Conditions D.1.3 and D.1.4.** ~~pursuant to Conditions D.1.3 and D.1.4 for the integral thermal oxidizers~~

(b) **No later than January 11, 2010, ~~T~~t**he Permittee shall test ~~three (3)~~ **one (1)** integral thermal oxidizer from ~~any Department 200~~ magnet wire ~~emission units and three (3) integral thermal oxidizers from any Department 300 magnet wire emission~~ **coating** units **213E/W through 216E/W** that has not been tested in the past ten (10) years. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

(c) No later than September 22, 2009, the Permittee shall test three (3) integral thermal oxidizers from magnet wire coating units 301E/W through 316E/W that have not been tested in the past ten (10) years. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

(d) No later than 180 days after the issuance of SSM 083-21221-00038, the Permittee shall test two (2) integral thermal oxidizers and two (2) lubricant coating subsection capture devices from magnet wire coating units 201E/W through 212E/W that have not been tested in the past ten (10) years. These tests shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted using methods approved by the Commissioner and in accordance with 326 IAC 3-6-3 and Section C - Performance Testing.

D.1.~~8~~**9** Thermal Oxidizer Temperature

…

(c) From the date of issuance of this permit until the results from the approved stack tests, required by Condition D.1.~~7~~**8**, are available, the Permittee shall operate the thermal oxidizer at or above the minimum hourly average temperature of ~~1360~~ **1350** ^{o}F.

…

D.1.~~9~~**10** National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products - Notifications [40 CFR 63.3910]

D.1.1~~0~~ Record Keeping Requirements

…

(b) To document compliance with Condition D.1.~~5~~**6**, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.

(c) To document compliance with Condition D.1.~~7~~**8**, the Permittee shall maintain records of the test results.

…

D.1.12 Requirement to Submit a ~~Significant~~ Permit Modification Application [326 IAC 2-7-12] [326 IAC 2-7-5]

(a) The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information from the Notification Of Compliance Status (NOCS) in the Title V permit.

(**1**~~a~~) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Title V permit the applicable requirements of 40 CFR 63, Subpart MMMM a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.

(**2**~~b~~) The significant permit modification application shall be submitted no later than April 2, 2006 and shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

(b) The Permittee shall submit an application for a Part 70 permit modification to the IDEM, OAQ to include the effective and expiration dates for all the Clean Units into the Title V permit.

(1) The permit modification application shall be consistent with 326 IAC 2-7-12.

(2) The permit modification application shall be submitted no later than sixty (60) days following the installation of the new control devices and shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Copper Rod and Bar Manufacturing Process

(~~k~~**l**) One (1) Copper Rod and Bar Manufacturing Process, identified as P-1, constructed in 1976, a maximum capacity of 20 tons of copper per hour, with emissions uncontrolled, exhausting to stack S-1, and consisting of:

(1) One (1) natural gas-fired vertical melt furnace, with a heat input capacity of 24 MMBtu/hr,

(2) One (1) holding furnace, with a heat input capacity of 2.0 MMBtu/hr,

(3) One (1) tundish, with a heat input capacity of 1.5 MMBtu/hr, and

(4) Various ancillary launders, with an aggregate heat input capacity of 2.5 MMBtu/hr.

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

D.2.4 Record Keeping Requirements

(a) To document compliance with Condition D.~~3~~**2**.3, the Permittee shall maintain once per shift records of the visible emission notations.

(b) To document compliance with Condition D.~~3~~**2**.2, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.

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

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Alcohol Quench Process and Storage Tanks

(~~l~~**m**) One (1) mill emulsion system identified as P-2 Mill Emulsion System, constructed in 1976, which pumps a mill emulsion solution containing 0.2% - 2.5% by volume Isopropyl Alcohol (2-propanol) through sprays in an enclosed rolling mill stand area, with emissions uncontrolled, and exhausting to stack/vent V-1;

(~~m~~**n**) One (1) quench system identified as P-2 Quench System, constructed in 1976, which pumps a quench solution containing 0.8% - 3.0% by volume Isopropyl Alcohol (2-propanol) ejectors into tubes, with emissions uncontrolled, and exhausting to stack/vent V-2;

The maximum capacity of the P-2 Alcohol Quench Process (Mill Emulsion System and Alcohol Quench System) is 300 pounds of 2-propanol (IPA) per hour.

(~~n~~**o**) One (1) 15,000 gallon mill emulsion storage tank, constructed in 1995;

(~~o~~**p**) One (1) 7,500 gallon quench solution storage tank, constructed in 1978.

(q) Two (2) 7,000 gallon isopropyl storage tanks, constructed in 1988.

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

D.3.2 Record Keeping Requirements

To document compliance with Condition D.4**3**.1, the Permittee shall keep readily accessible records showing the dimension of the storage tanks and an analysis showing the capacity of the storage tanks.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance Branch

Part 70 Quarterly Report

Source Name:	Essex Group, Inc., Vincennes plant
Source Address:	1299 East Essex Road, Vincennes, IN, 47591
Mailing Address:	1299 East Essex Road, Vincennes, IN, 47591
Part 70 Permit No.:	T083-7422-00008
Facilities:	201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W
Parameter:	~~The t~~**Total** VOC **emissions** ~~delivered by the coating applicators prior to drying/curing with integral thermal oxidization~~
Limit:	**453 tons of VOC per year. Monthly VOC emissions shall be determined with the following equation (see Condition D.1.7 of the permit for a description of the variables):** ~~Less than 9228 tons of VOC per twelve consecutive month period with compliance determined at the end of each month.~~

$$VOC_t = [(VOC_{iem} + VOC_{ilm}) \times (1 - DE_2/100)] + [(VOC_{ie2}) \times (1 - DE_2/100)] + VOC_{il2} + [VOC_{ie3} \times (1 - DE_3/100)] + VOC_{il3} + VOC_c$$

YEAR:

Month	Total VOC ~~Usage~~ **Emissions** This Month	Total VOC ~~Usage~~ **Emissions** from Past 11 Months	Total VOC ~~Usage~~ **Emissions** (12 Month Total)
Month 1			
Month 2			
Month 3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT~~
~~OFFICE OF AIR QUALITY~~
~~Compliance Branch~~

~~Part 70 Quarterly Report~~

~~Source Name: Essex Group, Inc., Vincennes plant~~
~~Source Address: 1299 East Essex Road, Vincennes, IN, 47591~~
~~Mailing Address: 1299 East Essex Road, Vincennes, IN, 47591~~
~~Part 70 Permit No.: T083-7422-00008~~
~~Facilities: 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W~~
~~Parameter: The total VOC used after the drying/curing with integral thermal oxidization~~
~~Limit: Less than 314 tons of VOC per twelve consecutive month period with compliance determined at the end of each month.~~

~~YEAR:~~

~~Month~~	~~Total VOC Usage This Month~~	~~Total VOC Usage from Past 11 Months~~	~~Total VOC Usage (12 Month Total)~~
~~Month 1~~			
~~Month 2~~			
~~Month 3~~			

~~9 No deviation occurred in this quarter.~~

~~9 Deviation/s occurred in this quarter.~~
~~Deviation has been reported on:~~

~~Submitted by:~~
~~Title / Position:~~
~~Signature:~~
~~Date:~~
~~Phone:~~

~~Attach a signed certification to complete this report.~~

Upon further review, IDEM, OAQ has made the following changes:

1. The mailing address for IDEM, OAQ has been changed as follows:

   100 North Senate Avenue~~, P.O. Box 6015~~
   Indianapolis, Indiana 4620~~46-6015~~

   This change has been made throughout the whole permit.

2. In accordance with the credible evidence rule (62 Fed. Reg. 8314, Feb 24, 1997); Section 113(a) of the Clean Air Act, 42 U.S. C. § 7413 (a); and a letter from the United States Environmental Protection Agency (U.S. EPA) to IDEM, OAQ dated May, 18 2004, all permits must address the use of credible evidence. IDEM, OAQ is required to incorporate credible evidence provisions into state rules consistent with the SIP call published by U.S. EPA in 1997 (62 FR 8314). Therefore, IDEM, OAQ has incorporated the credible evidence provision in 326 IAC 1-1-6. This rule became effective March 16, 2005 and was incorporated into your permit as follows:

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

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

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached Part 70 PSD Significant Source Modification No. 083-21221-00008. The operation of this proposed modification shall be subject to the conditions of the attached Part 70 Significant Permit Modification No. 083-21551-00008.

Appendix A: Emissions Calculations
VOC and Particulate
From Wire Coating Operations

Company Name: **Essex Group, Inc - Vincennes**
Address City IN Zip: **Essex Rd., P.O. Box 259, Vincennes, IN, 47591**
PSD SSM: **083-21221-00008**
Reviewer: **ERG/BS**
Date: **07/18/05**

Unit ID*	Coating Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/lb Cu)	Maximum throughput (lb Cu/hour)**	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Uncontrolled VOC PTE (ton/yr)	**Particulate Potential (ton/yr)**	lb VOC/ gal solids	Transfer Efficiency	**Control efficiency (%)**	**Controlled VOC PTE (ton/yr)**
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	14400.0	7.20	7.18	307.24	7373.72	1345.70	0.00	54.96	100%	98.50%	20.19
Units	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	14400.0	6.36	6.35	517.40	12417.61	2266.21	0.00	29.66	100%	98.50%	33.99
(201E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	14400.0	7.27	7.26	2.72	65.19	11.90	0.00	0.00	100%	0.0%	11.90
208E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	14400.0	5.83	5.82	30.24	725.80	132.46	0.00	632.34	100%	**98.5%**	1.99
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	5264.0	7.20	7.18	112.31	2695.50	491.93	0.00	54.96	100%	98.50%	7.38
Units	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	5264.0	6.36	6.35	189.14	4539.33	828.43	0.00	29.66	100%	98.50%	12.43
(209E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	5264.0	7.27	7.26	0.99	23.83	4.35	0.00	0.00	100%	0.0%	4.35
212E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	5264.0	5.83	5.82	11.06	265.32	48.42	0.00	632.34	100%	**98.5%**	0.73
												TOTAL			**0.00**				**92.94**

State Potential Emissions

* Each Unit (an 2XXE or 2XXW) consists of a combination of equipment: annealer, enamel applicator, curing oven, wire cooler, and topical lube applicator.
** The copper throughput listed represents the total copper throughput of all the units in that group.
*** Represents the 2-yr (2003 and 2004) consecutive average actual emissions of the emissions units.
^ Represents the VOC PTE of the units following the modifcation as a worst case estimate.
Emissions from the enamel curing and lubricant coating sections are controlled by devices with 100% capture and 98.5% destruction efficiencies.
Note: The emissions calculated using this spreadsheet represent emissions from the respective coating operations from each unit. The emissions resulting from curing oven and thermal oxidizer firing have not changed.
The 'solvent blend' coating material represents the clean up solvent used.
All coatings represent the worst case use scenario

Baseline Actual VOC emissions (per unit) ***	3.85
Baseline Actual VOC emissions (all units) ***	92.40
Projected Annual VOC Emissions ^	92.94
Net emissions increase of modification	0.54
PSD significance threshold	40.00

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/lb Cu) * Maximum (lb Cu/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/lb) * Maximum (lb/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/lb) * Maximum (lb/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (lb/hour) * (gal/lb) * (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

Appendix A: Emissions Calculations
HAP Emissions
From Wire Coating Operations

Company Name: Essex Group, Inc - Vincennes
Address City IN Zip: Essex Rd., P.O. Box 259, Vincennes, IN, 47591
PSD SSM: 083-21221-00008
Reviewer: ERG/BS
Date: 07/18/05

									Uncontrolled HAPs					Potential HAPs after integral contro			
Unit ID*	Coating Material	Density (Lb/Gal)	Gal of Mat. (gal/lb Cu)	Maximum throughput (lb Cu/hour)**	Weight % Phenol	Weight % Cresylic Acid	Weight % Xylene	Weight % Cumene	Phenol Emissions (ton/yr)	Cresylic Acid (ton/yr)	Xylene Emission (ton/yr)	Cumene Emission (ton/yr)	control efficiency (%)	Phenol Emission (ton/yr)	Cresylic Acid (ton/yr)	Xylene Emissions (ton/yr)	Cumene Emissions (ton/yr)
Dept 200	nylon top coat	8.60	0.00297	14400.0	43.60%	22.90%	0.52%	0.26%	702.39	368.92	8.31	4.16	98.5%	10.54	5.53	0.12	0.06
Units	polyester base coat	9.10	0.00566	14400.0	19.80%	28.33%	0.62%	0.31%	643.22	920.32	20.08	10.04	98.5%	9.65	13.80	0.30	0.15
(201E&W-	solvent blend	7.27	0.00003	14400.0	0.00%	0.00%	3.00%	1.50%	0.00	0.00	0.45	0.23	0.0%	0.00	0.00	0.45	0.23
208E&W)	dri lube topical	5.90	0.00036	14400.0	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	98.5%	0.00	0.00	0.00	0.00
Dept 200	nylon top coat	8.60	0.00297	5264.0	43.60%	22.90%	0.52%	0.26%	256.76	134.86	3.04	1.52	98.5%	3.85	2.02	0.05	0.02
Units	polyester base coat	9.10	0.00566	5264.0	19.80%	28.33%	0.62%	0.31%	235.13	336.43	7.34	3.67	98.5%	3.53	5.05	0.11	0.06
(209E&W-	solvent blend	7.27	0.00003	5264.0	0.00%	0.00%	3.00%	1.50%	0.00	0.00	0.17	0.08	0.0%	0.00	0.00	0.17	0.08
212E&W)	dri lube topical	5.90	0.00036	5264.0	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	98.5%	0.00	0.00	0.00	0.00

** The copper throughput listed represents the copper throughput of one unit of that production group multiplied by the number of units in that group

Individual HAP Totals	27.56	26.41	1.20	0.60

PTE of Total HAPs 55.77

METHODOLOGY

HAP emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations
Natural Gas Combustion from Magnet Wire Curing Ovens

Company Name: **Essex Group, Inc - Vincennes**
Address City IN Zip: **Essex Rd., P.O. Box 259, Vincennes, IN, 47591**
PSD SSM: **083-21221-00008**
Reviewer: **ERG/BS**
Date: **07/18/05**

Aggregate Heat Input Capacity (64 units @ 1.4 MMBtu/hr each)

89.6 MMBtu/hr Potential Throughput: 784.9 MMCF/yr 89,600 MMCF/hr

Criteria Pollutants Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential To Emit (ton/yr)	**2.98**	**2.98**	**0.24**	**39.24**	**2.16**	**32.97**

**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

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4,

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

Appendix A: Emissions Calculations
VOC and Particulate
From Wire Coating Operations

Company Name: Essex Group, Inc - Vincennes
Address City IN Zip: Essex Rd., P.O. Box 259, Vincennes, IN, 47591
Part 70 permit:
Reviewer: ERG/BS
Date: 08/21/03

new control efficiency = 98.50%
new coating capacity = 900.00

NEW coating input capacity (ton/yr - all ovens) = 10463.17 (vs. 9228)
NEW lubricant/solvent input capacity (ton/yr - all ovens) = 364.94 (vs. 314)

Unit ID*	Coating Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/lb Cu)	Maximum throughput (lb Cu/hour)**	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Uncontrolled VOC PTE (ton/yr)	**Particulate Potential (ton/yr)**	lb VOC/ gal solids	Transfer Efficiency	**Control efficiency (%)**	**Controlled VOC PTE (ton/yr)**
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	**5400.0**	7.20	7.18	115.21	2765.15	504.64	0.00	54.96	100%	98.50%	7.57
Group 1 EUs	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	**5400.0**	6.36	6.35	194.03	4656.60	849.83	0.00	29.66	100%	98.50%	12.75
(201E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	**5400.0**	7.27	7.26	1.02	24.45	4.46	0.00	#DIV/0!	100%	0.0%	4.46
203E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	**5400.0**	5.83	5.82	11.34	272.18	49.67	0.00	632.34	100%	**98.5%**	0.75
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	**9000.0**	7.20	7.18	192.02	4608.58	841.07	0.00	54.96	100%	98.50%	12.62
Group 1 EUs	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	**9000.0**	6.36	6.35	323.38	7761.01	1416.38	0.00	29.66	100%	98.50%	21.25
(204E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	**9000.0**	7.27	7.26	1.70	40.75	7.44	0.00	#DIV/0!	100%	0.0%	7.44
208E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	**9000.0**	5.83	5.82	18.90	453.63	82.79	0.00	632.34	100%	**98.5%**	1.24
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	2108.0	7.20	7.18	44.98	1079.43	197.00	0.00	54.96	100%	98.50%	2.95
Group 2 EUs	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	2108.0	6.36	6.35	75.74	1817.80	331.75	0.00	29.66	100%	98.50%	4.98
(215E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	2108.0	7.27	7.26	0.40	9.54	1.74	0.00	#DIV/0!	100%	0.0%	1.74
216E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	2108.0	5.83	5.82	4.43	106.25	19.39	0.00	632.34	100%	0.0%	19.39
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	**5264.0**	7.20	7.18	112.31	2695.50	491.93	0.00	54.96	100%	98.50%	7.38
Group 3 EUs	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	**5264.0**	6.36	6.35	189.14	4539.33	828.43	0.00	29.66	100%	98.50%	12.43
(209E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	**5264.0**	7.27	7.26	0.99	23.83	4.35	0.00	#DIV/0!	100%	0.0%	4.35
212E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	**5264.0**	5.83	5.82	11.06	265.32	48.42	0.00	632.34	100%	**98.5%**	0.73
Dept 200	nylon top coat	8.60	83.70%	0.2%	83.5%	0.2%	13.07%	0.00297	2108.0	7.20	7.18	44.98	1079.43	197.00	0.00	54.96	100%	98.50%	2.95
Group 3 EUs	polyester base coat	9.10	69.90%	0.1%	69.8%	0.2%	21.40%	0.00566	2108.0	6.36	6.35	75.74	1817.80	331.75	0.00	29.66	100%	98.50%	4.98
(213E&W-	solvent blend	7.27	100.00%	0.2%	99.8%	0.2%	0.00%	0.00003	2108.0	7.27	7.26	0.40	9.54	1.74	0.00	#DIV/0!	100%	0.0%	1.74
214E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00036	2108.0	5.83	5.82	4.43	106.25	19.39	0.00	632.34	100%	0.0%	19.39
Dept 300	nylon top coat	8.50	87.80%	0.2%	87.6%	0.2%	7.57%	0.00700	2840.0	7.46	7.45	148.07	3553.61	648.53	0.00	98.39	100%	98.50%	9.73
Group 1 EUs	urethane base coat	8.43	70.90%	0.1%	70.8%	0.1%	21.89%	0.01010	2840.0	5.97	5.96	171.10	4106.33	749.41	0.00	27.25	100%	98.50%	11.24
(301-304,	solvent blend	7.60	100.00%	0.2%	99.8%	0.2%	0.00%	0.00004	2840.0	7.60	7.58	0.86	20.68	3.77	0.00	#DIV/0!	100%	0.0%	3.77
307E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00049	2840.0	5.83	5.82	8.10	194.30	35.46	0.00	632.34	100%	0.0%	35.46
Dept 300	nylon top coat	8.50	87.80%	0.2%	87.6%	0.2%	7.57%	0.00700	6248.0	7.46	7.45	325.75	7817.94	1426.77	0.00	98.39	100%	98.50%	21.40
Group 2 EUs	urethane base coat	8.43	70.90%	0.1%	70.8%	0.1%	21.89%	0.01010	6248.0	5.97	5.96	376.41	9033.93	1648.69	0.00	27.25	100%	98.50%	24.73
(305,306,	solvent blend	7.60	100.00%	0.2%	99.8%	0.2%	0.00%	0.00004	6248.0	7.60	7.58	1.90	45.49	8.30	0.00	#DIV/0!	100%	0.0%	8.30
308E&W-316E&W)	dri lube topical	5.90	98.80%	0.2%	98.6%	0.1%	0.92%	0.00049	6248.0	5.83	5.82	17.81	427.45	78.01	0.00	632.34	100%	0.0%	78.01
												TOTAL			**0.00**				**343.72**

State Potential Emissions

* Each Emission Unit (EU) as denoted by the source, consists of a combination of equipment: annealer (shared by E&W units), enamel applicator, curing oven, wire cooler, and topical lube applicator.

** The copper throughput listed represents the total copper throughput of all the units in that group.

The estimated control efficiency of the thermal oxidizers is at least 98.5%.

Note: The emissions calculated using this spreadsheet represent emissions from only the respective coating operations from each EU. The emissions resulting from curing oven and thermal oxidizer firing are included on another page.

All coatings represent the worst case use scenario

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/lb Cu) * Maximum (lb Cu/hr)

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

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

Particulate Potential Tons per Year = (lb/hour) * (gal/lb) * (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

APPENDIX B

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION

Source Information and Description

Source Name:	Essex Group, Inc. - Vincennes plant
Source Location:	1299 East Essex Road, Vincennes, IN, 47591
County:	Knox
SIC Code:	3351 and 3357
Operation Permit No.:	T083-7422-00008
Operation Permit Issuance Date:	May 3, 2004
Significant Source Modification No.:	083-21221-00008
Significant Permit Modification No.:	083-21551-00008
Permit Reviewer:	ERG/BS

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following federal BACT (Best Available Control Technology) review for a modification proposed by Essex Group, Inc. ("Essex"), located in Vincennes, Indiana. The modification consists of the following:

(a) An increase in the production capacity of sixteen (16) existing magnet wire coating units: 201E and 201W through 208E and 208W. The existing capacity is 658 pounds of copper wire per hour, per unit. The new capacity is 900 pounds of copper wire per hour, per unit.

(b) An increase in the production capacity of eight (8) existing magnet wire coating units: 209E and 209W through 212E and 212W. The existing capacity is 527 pounds of copper wire per hour, per unit. The new capacity is 658 pounds of copper wire per hour, per unit.

(c) The addition of ten (10) wire annealers to magnet wire coating units 201E and 201W - 203E and 203W, 206E and 206W - 208E and 208W and 209E and 209W - 212E and 212W. Currently, each E/W pair shares a common annealer. After the modification, each unit will have its own annealer. The annealer additions allow Essex greater flexibility in oven scheduling, reduced downtime, reduced scrap generation and greater energy use efficiency.

(d) The addition of emission capture devices on the lubricant coating subsections of units 201E and 201W through 212E and 212W. Emissions captured by the devices will be routed to, and destroyed by, integral thermal oxidizers.

Background and Process Description

Each magnet wire coating unit consists of an enamel applicator, drying/curing oven, wire cooler, and topical lube applicator. Each pair of magnet wire coating units (units which share the same numerical ID number) shares a thermal oxidizer. Raw wire is first annealed then sent to the enamel applicator where the wire is coated. The coated wire then passes to a drying/curing oven equipped with an integral thermal oxidizer. The dried/cured wire is then cooled, and finally coated with a topical lubricant. VOC emissions generated by the magnet wire coating units result from the evaporation of VOC from: 1) enamel coatings during drying/curing and 2) topical lubricant. As a result, BACT for VOC is evaluated for the enamel curing subsection and lubricant coating subsection of the units.

The enamel curing operation is totally enclosed, as defined by Method 204 of 40 CFR Part 51, Appendix M, which allows for complete capture of the VOC emissions. The far majority of the VOC emissions are subsequently destroyed in the integral thermal oxidizers which serve to satisfy the heat requirement of the ovens and also function as control devices. The lubricant coating operation is uncontrolled.

BACT Description

The source is located in Knox County which is designated as attainment or unclassifiable for all criteria pollutants. For the purposes of evaluating VOC emissions, each magnet wire coating unit consists of two subsections, a basecoat/topcoat coating subsection (using integral thermal oxidization for VOC control) and a topical lubricant coating subsection (no controls). Pursuant to 326 IAC 2-2-3, BACT for VOC has been evaluated and determined for each of these subsections.

> BACT is defined as "an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under the CAA emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act."

According to the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses are conducted with a 'top-down' approach which consists of the following steps:

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies by control effectiveness;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses (specifically step 4) must take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment. This BACT determination is based on the following information:

(1) The PSD permit application submitted by Essex Group, Inc. on May 3, 2005;

(2) The EPA RACT/BACT/LAER (RBLC) Clearinghouse;

(3) Permit requirements of other magnet wire production facilities; and

(4) Results from stack testing on representative emission units at the Vincennes plant.

BACT for VOC – Enamel curing subsection

Step 1 - Identify Control Options

The following technologies were identified as potentially available options that could be used to control VOC emissions from the enamel curing subsection of the magnet wire coating units. IDEM and the Permittee searched EPA's RACT/BACT/LAER Clearinghouse (RBLC) and reviewed permits of nearly identical sources to produce this list.

SIC Code	Source Name (location)	RBLC ID or Permit Number (issuance date)	Process	Technology	Control Efficiency
3357	Essex Group - Vincennes (Vincennes, IN)	T083-7422-00008 (May 3, 2004)	Magnet wire curing	Integral thermal oxidization	98.5%
3357	Rea Magnet Wire Company (Lafayette, IN)	T157-6960-00032 (February 18, 1999)	Magnet wire curing	Integral thermal oxidization	98.5%
3357	Phelps Dodge Magnet Wire Company (Fort Wayne, IN)	T003-6925-00013 (October 10, 2002)	Magnet wire curing	Thermal oxidization	96.7%
3357	Essex Group - Franklin (Franklin, TN)	LAER TN-0022	Magnet wire curing	Incineration using an afterburner	95%
3357	Essex Group - Franklin (Franklin, TN)	LAER TN-0120	Magnet wire curing	Thermal oxidization	87%

Step 2 - Eliminate technically infeasible control options

As with all baking/curing operations, the temperature used to cure the product must be high enough to ensure product quality (e.g. the enamel is not "sticky") but low enough to ensure that the coating is not damaged (e.g. the enamel is not burned or "coked"). The use of integral thermal oxidization at a destruction efficiency of greater than 98.5% is not technically feasible because the corresponding oven temperatures at that destruction efficiency would potentially damage the coatings and compromise product quality. This determination was made by Essex in preparation for the BACT determination included in the TSD for T083-7422-00008, issued May 3, 2004. As the above table indicates, pursuant to T083-7422-00008, issued May 3, 2004, Essex is currently required to maintain a destruction efficiency of at least 98.5%. Combined with a mandated capture efficiency of 100%, Essex currently achieves an overall control efficiency of 98.5% on their magnet wire coating units.

Note that a review of additional control options provided in the EPA's Air Pollution Control Technology Fact Sheets (located at www.epa.gov/ttn/catc/products.html) was not completed because Essex uses, and has proposed to continue using, the control option with the greatest emission reduction potential.

Step 3 - Rank remaining control technologies by control effectiveness

The technically feasible control options rank as follows:

Control Type	Estimated VOC Control Efficiency
Integral Thermal Oxidization	98.5%
Non-integral Thermal Oxidization	96.7%

Incineration with an Afterburner	95%
Non-integral Thermal Oxidization	87%

Step 4 - Evaluate the most effective controls and document results

Integral thermal oxidization, operating with a 98.5% destruction efficiency, is the best (i.e. has the greatest emission reduction potential) technically feasible control option. Since this option is currently employed by Essex as required by existing permit requirements, economic and energy analyses are not necessary. The use of integral thermal oxidation (on the respective units) will result in potential VOC emission reductions of up to 4600 tons per year based on an overall control efficiency of 98.5% (100% capture and 98.5% destruction).

Step 5 - Select BACT

Based on the considerations mentioned above, IDEM has determined that BACT for VOC for the enamel curing subsections of the magnet wire coating units (201E and 201W through 208E and 208W, and 209E and 209W through 212E and 212W) shall remain as follows:

> VOC emissions from the enamel curing subsection of magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the integral thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

Note that Essex has decided to retain its existing (pursuant to T083-7422-00008, May 3, 2004) VOC BACT emission limit of 453 tons per year. This limit applies to all sixty-four (64) Department 200 and 300 magnet wire coating units; many of which are not involved in the corresponding modification. **As a result, the allowable VOC increase associated with this modification is zero (0) tons per year.**

Due to the operational design of the magnet wire coating units, and to allow maximum operational flexibility, the structure of the final BACT limits for the enamel curing and lubricant coating subsections will be presented together at this end of this document.

BACT for VOC – Lubricant coating subsection

A review of EPA's RBLC identified zero (0) facilities under the RBLC Code 41.010 (Organic Evaporative losses – Magnet Wire Surface Coating) that implemented BACT to control VOC emissions from lubricant coating. A review of the permit requirements of other magnet wire production facilities revealed zero (0) facilities that control VOC emissions from lubricant coating. As a result, the OAQ considered control technologies from similar operations; specifically, technically feasible controls for magnet wire enamel curing subsections.

Essex proposed that BACT for the lubricant coating subsection to be equivalent to BACT for the enamel curing subsection. Since BACT for the enamel curing subsection is the highest feasible level of control, further review is not necessary.

Note that a review of the information provided in the EPA's Air Pollution Control Technology Fact Sheets (located at www.epa.gov/ttn/catc/products.html) indicates that other available VOC-control technologies (such as catalytic oxidization) can not achieve the destruction efficiencies of thermal oxidization. As a result, those technologies were not reviewed in detail.

Based on the considerations mentioned above, IDEM has determined that BACT for VOC for the lubricant coating subsections of the magnet wire coating units (201E and 201W through 208E and 208W, and 209E and 209W through 212E and 212W) shall be as follows:

VOC emissions from the lubricant coating subsection of magnet wire coating units 201E and 201W through 212E and 212W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

Final BACT

Note that Essex has decided to retain its existing (pursuant to T083-7422-00008, May 3, 2004) VOC BACT emission limit of 453 tons per year. This limit applies to all sixty-four (64) Department 200 and 300 magnet wire coating units; many of which are not involved in the corresponding modification. **As a result, the allowable VOC increase associated with this modification is zero (0) tons per year.**

The existing BACT requirements for those magnet wire coating units not affected by this modification, units 213E and 213W through 216E and 216W and 301E and 301W through 316E and 316W, has been unchanged and included here for clarification. However, the structure of original BACT limitation (pursuant to T083-7422-00008, May 3, 2004) has been revised to accommodate the BACT limits contained in this document and provide maximum operational flexibility.

As a result, BACT for the Department 200 and 300 magnet wire coating units shall be the following:

Pursuant to 326 IAC 2-2-3 and PSD SSM 083-21221-00008:

(a) VOC emissions from the enamel curing subsection of magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the integral thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(b) VOC emissions from the lubricant coating subsection of magnet wire coating units 201E and 201W through 212E and 212W shall be controlled by a device with a minimum one-hundred percent (100%) capture efficiency (as defined by Method 204 of 40 CFR Part 52, Appendix M). The captured VOC emissions shall be routed to the thermal oxidizers and destroyed with a minimum ninety-eight and five tenths percent (98.5%) destruction efficiency.

(c) The total VOC emissions from magnet wire coating units 201E and 201W through 216E and 216W and 301E and 301W through 316E and 316W shall not exceed 453 tons per year.

Compliance with these limits will satisfy the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) with respect to VOC for the affected units.

The procedures for demonstrating compliance are listed in the Technical Support Document.

(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.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impractible to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

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
FNTVOP.dot 1/10/05