

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

S & C Electric Company
Attn: Robert Sullivan
6601 North Ridge Boulevard
Chicago, Illinois 60626-3904

Application No.: 04050076

I.D. No.: 031600CGP

Applicant's Designation:

Date Received: May 25, 2004

Subject: Fuse Coating and Marking, Adhesive Application Operation

Date Issued: November 22, 2004

Location: 6601 North Ridge Boulevard, Chicago, 60626

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a modification to the existing Fuse Coating and Marking Line and the Adhesive Application Operation, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 OVERALL SOURCE CONDITIONS

1.1 Source-Wide Emission Limitations

1.1.1 Emissions of Hazardous Air Pollutants

- a. Emissions attributable to the usage of the following materials at the source which have the potential to emit Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not exceed the following limits:

<u>Material</u>	<u>Individual HAP</u>		<u>Combined HAPs</u>	
	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Coatings ¹	1.2	9.5	2.6	21.0
Adhesives ²	0.3	1.7	0.3	1.7
Other Operations ³	0.2	1.4	0.3	1.8
Total ⁴	1.2	9.5	3.1	24.5

¹ Includes coatings and associated cleanup for the EFS/PFS line(s)

² Includes coatings and associated cleanup for the adhesive application line(s)

³ e.g., fuse coating and marking, etc.

⁴ This is a total limit for each individual HAP and combination of all HAPs emitted at the source.

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

1.1.2 Future Permitted Emissions As Related to Fees

It is expected that the modification to the source authorized by this permit will be accompanied by an increase in the permitted emissions of the source, as addressed by the source's CAAPP permit, to the following levels. (See also Condition 4(b).)

New Levels of Permitted Emissions

Pollutant	Tons/Year
Volatiles Organic Material (VOM)	98.30
Sulfur Dioxide (SO ₂)	17.19
Particulate Matter (PM)	18.05
Nitrogen Oxides (NO _x)	67.80
HAP, Not Included in VOM or PM	---
Total	201.34

Note: These limitations would address the annual emissions from the modified source, as addressed by this permit, not considering insignificant activities. These limitations would not be needed for purposes of New Source Review, i.e., Major Stationary Sources Construction and Modification, 35 IAC Part 203, and Prevention of Significant Deterioration, 40 CFR 52.21.

1.2 Source-Wide Operational Limitations

1.2.1 Material Usage Limitations

- a. Usage of the following materials shall not exceed the following limits. These limits are based on purchased/dispensed material without disposal/reclaimed credit if appropriate documentation to demonstrate disposal/reclaimed credit is not maintained (See also Condition 1.3.1(a)).

<u>Material</u>	Usage	
	<u>(Gal/Mo)</u>	<u>(Gal/Yr)</u>
EFS/PFS Coatings	4,800	32,000
EFS/PFS Cleanup Solvents ⁵	1,850	14,950
Adhesive Application Coatings	1,250	10,000

⁵ This limit applies to cleanup solvents which contain HAPs, i.e., this limit would not apply to solvents such as acetone.

1.2.2 Cleaning Materials

- a. VOM containing cleaning materials, including used cleaning towels associated with the coating lines shall be kept, stored or disposed of in closed containers.

1.3 General Recordkeeping Requirements

1.3.1 Records for HAP Emissions

- a. The Permittee shall maintain records of the following items for each emission unit or group of related units that has the potential to emit HAPs to verify that the source is not a major source of HAP emissions.
 - i. HAP content of each material that contains a HAP, for individual and total HAPs;
 - ii.
 - A. Monthly usage of each material where emissions are not controlled or unused (virgin) solvent is not recovered;
 - B. Monthly usage of each material where emissions are controlled;
 - C. Monthly usage of each material where solvent material is recovered.
 - iii. Waste solvent records:
 - A. Amount of waste solvent shipped off for disposal (tons/month and tons/year);
 - B. HAP content of the waste solvent shipped off for disposal (weight percent). HAP content of waste solvent shall be determined based on laboratory analysis;
 - iv. Each period when a control device used to control organic material emissions (e.g., catalytic afterburner) is not operating properly (e.g., low temperature, etc.), with description, usage of material that was affected, and an estimate of additional HAP emissions, with explanation and calculation.
 - v. Emissions of HAPs (individual and combination of all HAPs) with supporting documentation and example calculations (tons/month and tons/year).
- b. As an alternative to keeping the above records of material usage for "other operations", the Permittee

may keep a demonstration, which shall be kept current, that the maximum emissions of such operations given the maximum level of activity that could as a practical matter, occur at the source, would not exceed the applicable limits in Condition 1.1.1(a).

1.4 Non-Applicability of Regulations of Concern

1.4.1 This permit is issued based on the source not being subject to 40 CFR Part 63, Subparts MMMM, PPPP, and DDDDD because the source is not a major source of HAPs. (See also Condition 1.1.1)

2.0 UNIT SPECIFIC CONDITIONS

2.1 Fuse Coating and Marking Operation; and Resin Mixing, Molding, and Extruding Process

2.1.1 Description

The fuse coating and marking operation is a process where plastic fuse tubes are coated in a small paint booth with paint and cured in a small electric oven. The resin molding operation is the process whereby a two-part cypoxy resin molding is used to manufacture cypoxy molded parts used in the switchgear.

This modification entails authorizing an increase in the permitted emissions for the fuse coating and marking operation.

2.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
P-9011 & P-9012	Fuse Coating and Marking Operation	1992	Filter
P-0021	Resin Mixing, Molding, and Extruding Process	1990	Dripak Filter

2.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected process unit" for the purpose of these unit-specific conditions, are emission units described in Conditions 2.1.1 and 2.1.2.
- b. The affected process units are subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission

of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

- c. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit, except as provided in Sections 218.302, 218.303, 218.304 of this Part and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material.

2.1.4 Non-Applicability of Regulations of Concern

The affected process units are not subject to 35 IAC Subpart PP or TT because the affected process units together do not have maximum theoretical emissions of 100 tons per year or have a potential to emit of 25 tons per year, pursuant to 35 IAC 218.980(a) and (b). The fuses also meet the plastic parts exception pursuant to 35 IAC 218.980(b)(2)(B).

2.1.5 Operational and Production Limits and Work Practices

- a. The Permittee shall operate, maintain, and replace filters of the affected process units in a manner that assures compliance with the conditions of this section.
- b. An adequate inventory of spare filters shall be maintained.

2.1.6 Emission Limitations

- a. Emissions from the Fuse Coating and Marking Operation shall not exceed the following limits:

VOM Emissions	
<u>(Lb/Hour)</u>	<u>(Ton/Year)</u>
8.0	5.06

These limits are based on the material used by the Fuse Coating Operation.

- b. Emissions from the Resin Mixing, Molding, and Extruding Process shall not exceed the following limits:

VOM Emissions

<u>Pollutant</u>	<u>(Lb/Mo)</u>	<u>(Ton/Year)</u>
VOM	2,300	13.5

These limits are based on the material used by the Resin Mixing, Molding, and Extruding Process with a yearly contemporaneous VOM emission increase of 0.65 tons per year.

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

2.1.7 Testing Requirements

None

2.1.8 Monitoring Requirements

None

2.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected process units to demonstrate compliance with Conditions 1.1.2 and 2.1.3:

- a. The material used in the affected process units, lb/month and lb/year.
- b. The VOM content of each material used in the affected process units, wt.%.
- c. The VOM emissions from each affected process units, ton/month and ton/year.
- d. Results of filter inspections and dates of replacements.

2.1.10 Reporting Requirements

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

- a. Emissions of PM from an affected process unit in excess of the limits specified in Condition 2.1.3(b) within 30 days of such an occurrence.
- b. Emissions of VOM from an affected process unit in excess of the limits specified in Condition 2.1.3(c) and 2.1.6 within 30 days of such an occurrence.

2.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

2.1.12 Compliance Procedures

- a. Compliance with Condition 2.1.3(b) and (c) is demonstrated by proper operating conditions of the affected process units. This includes operational and production limits and work practices in Conditions 2.1.5(a) and (b) and the record requirements in Condition 2.1.9.
- b. Compliance with the emission limits in Conditions 1.1.2 and 2.1.6 shall be based on the recordkeeping requirements in Condition 2.1.9 and the formulas listed below:

$$\text{VOM Emissions (ton)} = \Sigma [(\text{Material Usage, lb}) \times (\text{VOM Content of the Material, wt.}\%)] \div 2000 \text{ lb/ton}$$

Where Σ = is the summation of all Materials

2.2 Adhesive Application

2.2.1 Description

The adhesive application is a process that involves hand dipping of steel parts into cans of adhesive. An afterburner will be used when certain high-VOM coatings are applied.

This modification entails authorizing an increase in the permitted emissions for the adhesive application operation and to allow additional operational flexibility with respect to usage of the afterburner.

2.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
P-0052	Adhesive Application	1992	Afterburner for High VOM Coatings

2.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected adhesive application" for the purpose of these unit-specific conditions, is an adhesive application described in Conditions 2.2.1 and 2.2.2.
- b. The affected adhesive application is subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

- c. The affected adhesive application is subject to 35 IAC Part 218 Subpart F: Coating Operations. Except as provided in 35 IAC 218.207 (see also Condition 2.2.3(d), the Permittee shall not apply at any time any coating in which the VOM content exceeds the following emission limitations for the specified coating. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. The emission limitations are as follows:

	<u>kg/l</u>	<u>lb/gal</u>
Extreme Performance Top Coat		
Air Dried	0.42	3.5

[35 IAC 218.204(j) (2) (A)]

- c. As an alternative to using compliant coatings, the Permittee may use the following alternative emission limitation specified by 35 IAC 218.207(b): Each affected adhesive application shall comply with one of the following options pursuant to 35 IAC 218.207(b):
 - i. The affected adhesive application is equipped with a capture system and control device that provides 81 percent reduction in the overall emissions of VOM from the affected adhesive application and the control device has a 90 percent efficiency, or
 - ii. The system used to control VOM from the affected adhesive application is demonstrated to have an overall efficiency sufficient to limit VOM emissions to no more than what is allowed under 35 IAC 218.204. Such overall efficiency shall be determined as follows, pursuant to [35 IAC 218.207]:
 - A. Obtain the emission limitation from the appropriate subsection in 35 IAC 218.204.

- B. Calculate "S" according to the following equation:

$$S = \frac{C}{1 - (C/D)}$$

Where:

S = The limitation on VOM emissions in terms of kg VOM/1 (lbs VOM/gal) of solids

C = The limitation of VOM emissions in terms of kg/1 (lbs/gal) of coating (minus water and any compounds which are specifically excluded from the definition of VOM) specified in Section 218.204 of this Part

D = The density of VOM in the coating. For the purposes of calculating S, the density is 0.882 kg VOM/1 VOM (7.36 lbs VOM/gal VOM)

- C. Calculate the overall efficiency required according to the following equation:

$$E = ([VOMa - VOM1]/VOMa) \times 100$$

Where:

E = Equivalent overall efficiency of the capture system and control device as a percentage

VOMa = Actual VOM content of a coating, or the daily-weighted average VOM content of two or more coatings (if more than one coating is used), as applied to the subject coating line as determined by the applicable test methods and procedures specified in subsection (a) of this Section in units of kg VOM/1 (lb VOM/gal) of coating solids as applied

VOM1 = The VOM emission limit specified in 35 IAC 218.204 or 218.205 in units of kg

VOM/1 (lb VOM/gal) of coating solids as applied

2.2.4 Non-Applicability of Regulations of Concern

- a. No owner or operator of a coating line subject to the limitations of 35 IAC 218.204 is required to meet the limitations of 35 IAC 218.301 or 218.302, Use of Organic Material, after the date by which the coating line is required to meet 35 IAC 218.204 [35 IAC 218.209].
- b. The Permittee has addressed the applicability of 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM) to this project. The limits in this permit are intended to ensure that the project addressed in this construction permit does not constitute a major modification pursuant to these rules.

2.2.5 Operational and Production Limits and Work Practices

- a. When using the afterburner to demonstrate compliance with 35 IAC Part 218 Subpart F, the afterburner combustion chamber shall be preheated to the manufacturer's recommended temperature but not lower than 650°F, before the coating process is begun, and this temperature shall be maintained during operation of the affected adhesive application.
- b. The Permittee shall follow good operating practices for the afterburner, including periodic inspection, routine maintenance and prompt repair of defects.
- c. The affected adhesive application shall not use more than 1,000 gallons of coating per month and 10,000 gallons of coating per year including any VOM solvent added to the coatings at the source and any VOM solvent used for cleanup or maintenance of the affected adhesive application.

2.2.6 Emission Limitations

The affected adhesive application is subject to the following:

- a. Emissions from the affected adhesive application shall not exceed the following limits:

VOM Emissions	
<u>(Lb/Month)</u>	<u>(Ton/Year)</u>
1,250	5.0

These limits are based on the material used by the affected adhesive application.

- b. This permit is issued based on negligible emissions of particulate matter from the affected adhesive application. For this purpose, emissions from the line shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/yr.
- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

2.2.7 Testing Requirements

- a. The VOM content of each coating and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in 35 IAC 218.105 to establish the records required under 35 IAC 218.211 [35 IAC 218.211(a)].

2.2.8 Monitoring Requirements

- a. An owner or operator that uses an afterburner to comply with any Section of 35 IAC Part 218 shall use Illinois EPA and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the afterburner is in use. The continuous monitoring equipment must monitor for each afterburner which has a catalyst bed, commonly known as a catalytic afterburner, the temperature rise across each catalytic afterburner bed or VOM concentration of exhaust [35 IAC 218.105(d) (2) (A) (ii)].

2.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected adhesive application to demonstrate compliance with Conditions 1.1.2 and 2.2.3:

- a. When demonstrating compliance with 35 IAC Part 218 Subpart F using compliant coatings, the Permittee shall collect and record all of the following information each day for each affected adhesive application and maintain the information at the source for a period of three years [35 IAC 218.211(c) (2)]:
 - i. The name and identification number of each coating as applied on each coating line;
 - ii. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line;

- b. When demonstrating compliance with 35 IAC Part 218 Subpart F using add-on control, the Permittee shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years [35 IAC 218.211(e)(2)]:
 - i. The weight of VOM per volume of coating solids as applied each day on each coating line, if complying pursuant to Section 218.207(b)(2) of this Subpart.
 - ii. Control device monitoring data.
 - iii. A log of operating time for the capture system, control device, monitoring equipment and the associated coating line.
 - iv. A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- c. Usage of each coating (gallons/month and gallons/year);
- d. VOM emissions (tons/month and tons/year).

2.2.10 Reporting Requirements

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

- a. Emissions of PM from an affected adhesive application in excess of the limits specified in Condition 2.2.3(b) within 30 days of such an occurrence.
- b. When demonstrating compliance with 35 IAC Part 218 Subpart F using compliant coatings, emissions of VOM from an affected adhesive application in excess of the limits specified in Condition 2.2.3(c) within 30 days of such an occurrence.

2.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

2.2.12 Compliance Procedures

- a. Compliance with Condition 2.2.3(b) is demonstrated by proper operating conditions of the affected adhesive application. This includes operational and

production limits and work practices in Conditions 2.2.5.

- b. Compliance with the emission limits in Conditions 1.1 shall be based on the recordkeeping requirements in Condition 2.2.9 and the emission factors and formulas listed below:

- i. Emissions from the affected adhesive application from the use of coating shall be calculated based on the following formula:

VOM Emissions (lb) = S (Percent VOM in the Coating, %) * (Overall Coating Density, lb/gal) * (Coating Usage, gal/yr) * (1 - Overall Control Efficiency of the Afterburner, %)

Where:

The summation S is the summation of all coating used.

Note: If the afterburner is not used, then the overall control efficiency is zero.

- c. When demonstrating compliance with 35 IAC Part 218 Subpart F using add-on control, compliance with Conditions 2.2.3(c) is demonstrated by proper operating conditions of the affected adhesive application and the control equipment. This includes operational and production limits and work practices in Condition 2.2.5(a) and (b) and the recordkeeping requirements in Condition 2.2.9.

- 3. The authorization for modification provided by this permit and limitations of this permit become effective January 1, 2005.
- 4a. The modified emission units addressed by this construction permit may be operated under this permit until renewal of the CAAPP permit or a modification of the CAAPP permit is issued.
- b. The Permittee shall submit a timely application to modify the current CAAPP permit to incorporate this project. For this purpose, an application shall be submitted by February 1, 2005 or 30 days before commencing operation of the modified source, whichever date occurs first. This application may rely upon, and the Permittee need not resubmit, information contained in the application for this construction project.

It should be noted that while this project is accompanied by an increase in permitted emissions of criteria pollutants from the source, limitations on operation and permitted emissions of hazardous air pollutants are also being established that are intended to ensure that this source does not qualify as a major source for emissions of hazardous air pollutants.

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

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

DES:JMS:jar

Region 1