



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL CERTIFIED MAIL  
ASHTABULA COUNTY**

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049

**Application No: 02-13884**

**DATE: 5/3/00**

GE Lighting - Conneaut Base Plant  
Melanie A Tsikouris  
880 Maple Ave  
Conneaut, OH 44030

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
236 East Town Street, Room 300  
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo, Manager  
Field Operations and Permit Section  
Division of Air Pollution Control

CC: USEPA

NEDO



**Permit To Install**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**FINAL PERMIT TO INSTALL 02-13884**

Application Number: 02-13884  
APS Premise Number: 0204020023  
Permit Fee: **\$200**  
Name of Facility: GE Lighting - Conneaut Base Plant  
Person to Contact: Melanie A Tsikouris  
Address: 880 Maple Ave  
Conneaut, OH 44030

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**880 Maple Ave**  
**Conneaut, Ohio**

Description of proposed emissions unit(s):  
**Y-6 Glass Base Furnace.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency



Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

#### 2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

#### 3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### 4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized

representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

**5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

**6. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**7. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

**8. Termination of Permit to Install**

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**9. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio

Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities prove to be inadequate or cannot meet applicable standards.

**10. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

**11. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit to Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**12. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

**13. Source Operation and Operating Permit Requirements After Completion of Construction**

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the emissions unit(s) covered by this permit.

**14. Construction Compliance Certification**

**GE Lighting - Conneaut Base Plant**  
**PTI Application: 02-13884**  
**Issued: 5/3/00**

**Facility ID: 0204020023**

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**15. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

**B. Permit to Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)**  
**TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	2.19
NO <sub>x</sub>	7.63
SO <sub>2</sub>	5.03
VOC	0.27
CO	0.18

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property,  
and/or Equipment

Applicable Rules/Requirements

OAC rule 3745-18-06

P045 - Y-6 Glass Base Furnace OAC rule 3745-31-05 (A)(3)  
with a maximum daily production  
rate of 4.92 tons per day.

OAC rule 3745-17-07

OAC rule 3745-17-11

Applicable Emissions  
Limitations/Control Measures

The emissions from this emissions unit shall not exceed:

a. 0.50 pound per hour and 2.19 tons per year of PM.

b. 1.7425 pounds per hour and 7.63 tons per year of NO<sub>x</sub>.

c. 1.148 pounds per hour and 5.03 tons per year of SO<sub>2</sub>.

d. 0.0615 pounds per hour and 0.27 ton per year of VOC.

e. 0.04 pound per hour and 0.18 ton per year of CO.

Visible particulate emissions shall not exceed 5% opacity as a six-minute average from the stack.

See section A.2.a of these terms and conditions.

See section A.2.a of these terms and conditions.

See section A.2.a of these terms and conditions.

**2. Additional Terms and Conditions**

- 2.a** The emissions limits based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05.

**B. Operational Restrictions**

None

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall maintain daily records of the operating hours and the amount of raw materials charged to this emissions unit.

**D. Reporting Requirements**

None

**E. Testing Requirements**

1. Compliance with the emissions limitations in section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:  
0.5 lb/hour of PM

Applicable Compliance Method:

Compliance shall be determined based upon the following equation and record keeping requirement in section C.1 of these terms and conditions:

$$E = EF \times \text{Maximum Hourly Charge Rate}$$

Where,

E = Particulate matter emission rate, in pounds per hour.

EF = Emission factor, which is 0.00024 pound of particulate per pound of raw material charged. The emission factor is based on a stack test performed by GE on a similar unit on 8/31/92.

Maximum Hourly Charge Rate = Maximum hourly amount of raw materials charged to the furnace, 410 pounds per hour.

- b. Emission Limitation:  
1.148 lb/hour of SO<sub>2</sub>

Applicable Compliance Method:

Compliance shall be determined based upon the following equation:

$$E = EF \times (\text{Maximum Hourly Production Rate} / 2000 \text{ lbs/ton})$$

Where,

E = Sulfur dioxide emission rate, in pounds per hour.

EF = Emission factor, which is 5.6 lb/ton of material produced. The emission factor is taken from AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-1, Particulate, Sulfur Oxides and Nitrogen Oxides Emissions Factors for Glass Manufacturing.

Maximum Hourly Production Rate = Maximum hourly amount of materials produced, in pounds per hour.

- c. Emission Limitation:  
0.04 lb/hour of CO

Applicable Compliance Method:

Compliance shall be determined based upon the following equation:

$$E = EF \times (\text{Maximum Hourly Production Rate} / 2000 \text{ lbs/ton})$$

Where,

E = Carbon monoxide emission rate, in pounds per hour.

EF = Emission factor, which is 0.20 pound of CO per ton of material produced. The emission factor is taken from AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-2, VOC, Carbon Monoxide, and Lead Emissions Factors for Glass Manufacturing.

Maximum Hourly Production Rate = Maximum hourly amount of materials produced, in pounds per hour.

- d. Emission Limitation:  
1.7425 lb/hour of NO<sub>x</sub>

Applicable Compliance Method:

Compliance shall be determined based upon the following equation:

$$E = EF \times (\text{Maximum Hourly Production Rate} / 2000 \text{ lbs/ton})$$

Where,

E = Nitrogen oxides emission rate, in pounds per hour.

EF = Emission factor, which is 8.50 pound of NO<sub>x</sub> per ton of material produced. The

Emissions Unit ID: P045

emission factor is taken from AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-1, Particulate, Sulfur Oxides and Nitrogen Oxides Emissions Factors for Glass Manufacturing.

Maximum Hourly Production Rate = Maximum hourly amount of materials produced, in pounds per hour.

- e. Emission Limitation  
0.0615 pound per hour of VOC

Applicable Compliance Method:

Compliance shall be determined based upon the following equation:

$$E = EF \times (\text{Maximum Hourly Production Rate} / 2000 \text{ lbs/ton})$$

Where,

E = Carbon monoxide emission rate, in pounds per hour.

EF = Emission factor, which is 0.30 pound of CO per ton of material produced. The emission factor is taken from AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-2, VOC, Carbon Monoxide, and Lead Emissions Factors for Glass Manufacturing. Maximum Hourly Production Rate = Maximum hourly amount of materials produced, in pounds per hour.

- f. Emission Limitation  
2.19 tons per year of PM  
5.03 tons per year of SO<sub>2</sub>  
0.18 ton per year of CO  
7.63 tons per year of NO<sub>x</sub>  
0.27 ton per year of VOC

Applicable Compliance Method:

The tons per year limitations were developed by multiplying the pounds per hour limitations by the maximum operating schedule of 8760 hours per year, and dividing by 2000 pounds per ton. Therefore, provided compliance is shown with the hourly limitations, compliance will also be shown with the annual limitations.

- g. Emission Limitation: visible particulate emissions from the stack shall not exceed 5% opacity as a six-minute average.

Applicable Compliance Method: U.S. EPA method 9, if required by the Ohio EPA.

2. Compliance testing, using U.S. EPA reference methods, for the hourly limits shall be conducted, if

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**GE Li**

**PTI A**

**Issued: 5/3/00**

Emissions Unit ID: **P045**

required by Ohio EPA.

**F. Miscellaneous Requirements**

None

**NEW SOURCE REVIEW FORM B**

PTI Number: 02-13884 Facility ID: 0204020023

FACILITY NAME GE Lighting - Conneaut Base Plant

FACILITY DESCRIPTION Y-6 Glass Base Furnace. CITY/TWP Conneaut

SIC CODE 3699 SCC CODE 3-05-014-04 EMISSIONS UNIT ID P045

EMISSIONS UNIT DESCRIPTION Y-6 glass basing furnace

DATE INSTALLED 9/00

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter	Attainment	0.098	0.245	0.50	2.19
PM <sub>10</sub>					
Sulfur Dioxide	Attainment	1.148	2.87	1.148	5.03
Organic Compounds	Attainment	0.0615	0.27	0.0615	0.27
Nitrogen Oxides	Attainment	1.7425	4.36	1.7425	7.63
Carbon Monoxide	Attainment	0.04	0.1025	0.04	0.18
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

**WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?**

**Enter Determination** The BAT determination is (a) 0.50 lb/hr and 2.19 tons/yr of PM; (b) 1.148 lbs/hr and 5.03 tons/yr of SO<sub>2</sub>; (c) 1.7425 lbs/hr and 7.63 tons/yr of NO<sub>x</sub>; (d) 0.04 lb/hr and 0.18 ton/yr of CO, and (e) 0.0615 lb/hr and 0.27 ton/yr of VOC. The basis for the determination is knowledge of process, engineering analysis and regulations governing this emissions unit.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? No

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

**TOXIC AIR CONTAMINANTS**

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED\*? \_\_\_\_\_ YES  X  NO

IDENTIFY THE AIR CONTAMINANTS: \_\_\_\_\_

**NEW SOURCE REVIEW FORM B**

PTI Number: 02-13884 Facility ID: 0204020023

FACILITY NAME GE Lighting - Conneaut Base Plant

FACILITY DESCRIPTION Y-6 Glass Base Furnace. CITY/TWP Conneaut

**Please describe any hard copy information is being submitted with this recommendation (Please send hard copy information to Pam McGraner, DAPC Central Office - Air Quality Modeling and Planning):**

**NONE**

**Please provide any additional permit specific notes as you deem necessary:**

**(P045) Y-6 Glass Basing Furnace**Process Description

Lime glass particles in the form of cullet, which is crushed off-site, is melted with soda ash (crude  $\text{Na}_2\text{CO}_3$ ) and some  $\text{MnO}_2$  particles in a gas-fired furnace, producing a soda-lime glass product. GE personnel characterize their product as a pressed and blown glass type rather than flat glass or container glass. The material handling of the raw materials is already covered under source P009. After the glass is melted it is poured into clean metal shells, which comprise the bottom of a light bulb; there are no air emissions from this forming operation.

Air emissions, caused by the melting of the glass in the furnace, include PM,  $\text{NO}_x$ ,  $\text{SO}_2$ , and CO. There are no control devices proposed. The actual hours of operation will be 24 hours/day and 5000 hours/year.

**PM EMISSIONS**Uncontrolled/Actual

Emission factor for PM is 17.4 lb/ton based on AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-1, Particulate, Sulfur Oxides, and Nitrogen Oxides Emissions Factors for Glass Manufacturing.

A stack test performed by GE on a similar unit on 8/31/92 established the following emission factor for PM:  $2.39 \times 10^{-4}$  lb PM/lb raw material. The typical production rate at P045 is 410 #<sub>rm</sub>/hr.

$$410 \text{ #}_{\text{rm}}/\text{hr} \times 2.39 \times 10^{-4} \text{ #PM}/\text{#}_{\text{rm}} = 0.098 \text{ #PM}/\text{hr}$$

$$0.098 \text{ #PM}/\text{hr} \times 5000 \text{ hr}/\text{yr} \times \text{ton}/2000\# = 0.245 \text{ TPY}$$

Maximum

Maximum emissions would be based on the maximum operating hours of 8760 hr/yr :

$$410 \text{ #}_{\text{rm}}/\text{hr} \times 2.39 \times 10^{-4} \text{ #PM}/\text{#}_{\text{rm}} \times 8760 \text{ hr}/\text{yr} \times \text{ton}/2000\# = 0.43 \text{ TPY}$$
Allowable

Since the maximum uncontrolled rate of emissions is less than 10 lbs/hr, OAC Rule 3745-17-11, Figure II cannot be used. The natural gas and metal shell do not contribute to PM emissions and therefore not included in the  $\text{PWR}_{\text{max}}$  of 0.2575 ton/hour, per OAC rule 3745-17-11 (A)(4). The allowable rate according to Table I of OAC rule 3745-17-11 is:

$$4.10(0.2575)^{0.67} = 1.652 \text{ lbs}/\text{hr}$$

$$1.652 \text{ lbs}/\text{hr} \times 8760 \text{ hrs}/\text{yr} \times \text{ton}/2000 \text{ lbs} = 7.24 \text{ tons}/\text{yr}$$

This emissions unit is subject to 40 CFR 60.290 - 60.296 (NSPS Subpart CC), Standard of Performance for Glass Manufacturing Plants. But there is an exemption for sources that produce < 4550 kg/day (5.02 tons/day) according to 40 CFR 60.290 (c). Since the Y-6 furnace has a capacity of only 4.92 tons/day, it is exempt from this regulation.

**NEW SOURCE REVIEW FORM B**

PTI Number: 02-13884 Facility ID: 0204020023

FACILITY NAME GE Lighting - Conneaut Base Plant

FACILITY DESCRIPTION Y-6 Glass Base Furnace. CITY/TWP Conneaut

We propose a BAT limit of 0.5 lbs/hr and 2.19 tons/yr of PM.

**MANGANESE DIOXIDE EMISSIONS**

According to GE personnel MnO<sub>2</sub> does not react with the raw materials. The melting point of MnO<sub>2</sub> is 535°C (995°F). If the stack temperature will be < 800°F, the MnO<sub>2</sub> will probably be emitted as particles rather than as a vapor.

Uncontrolled/Actual

Assume that the MnO<sub>2</sub> emissions/PM emissions ratio is equivalent to the raw material input ratio:

$$10 \text{ lbs MnO}_2 / 410 \text{ lbs total raw material/hr} \times 0.098 \text{ lb PM/hr} = 0.0024 \text{ lb MnO}_2/\text{hr}$$
$$0.0024 \text{ lb MnO}_2/\text{hr} \times 8760 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 0.011 \text{ ton/yr}$$

Allowable

MnO<sub>2</sub> emissions less than 1 ton/yr. Therefore, air toxic modeling is not required. There shall be no allowable limit assigned for MnO<sub>2</sub> emissions.

**SO<sub>2</sub> EMISSIONS**

Uncontrolled/Actual

Emission factor for SO<sub>2</sub> is 5.6 lbs/ton (1.1 - 10.9 lbs/ton) based on AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-1, Particulate, Sulfur Oxides, and Nitrogen Oxides Emissions Factors for Glass Manufacturing.

$$5.6 \text{ lbs/ton glass} \times 410 \text{ lbs glass/hr} \times \text{ton}/2000 \text{ lbs} = 1.148 \text{ lbs/hr}$$
$$1.148 \text{ lbs/hr} \times 5000 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 2.87 \text{ tons/yr}$$

Maximum

$$1.148 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 5.03 \text{ tons/yr}$$

Allowable

OAC rule 3745-18-06 (B) exempts sources with a PWR<sub>max</sub> < 1000 lbs/hr from OAC rule 3745-18-06 (D). This emissions unit is classified as a process and has a PWR<sub>max</sub> = 410 lbs/hr.

The BAT limits are 1.148 lbs/hr and 5.03 TPY of SO<sub>2</sub> emissions.

**NO<sub>x</sub> EMISSIONS**

Uncontrolled/Actual

Emission factor for NO<sub>x</sub> is 8.5 lb/ton based on AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-1,

**NEW SOURCE REVIEW FORM B**

PTI Number: 02-13884 Facility ID: 0204020023

FACILITY NAME GE Lighting - Conneaut Base Plant

FACILITY DESCRIPTION Y-6 Glass Base Furnace. CITY/TWP Conneaut

**Particulate, Sulfur Oxides, and Nitrogen Oxides Emissions Factors for Glass Manufacturing.**

$$8.50 \text{ lbs/ton glass} \times 410 \text{ lbs glass/hr} \times \text{ton}/2000 \text{ lbs} = 1.7425 \text{ lbs/hr}$$

$$1.7425 \text{ lbs/hr} \times 5000 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 4.36 \text{ tons/yr}$$
Maximum

$$1.7425 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 7.63 \text{ tons/yr}$$
AllowableThe BAT limits are 1.7425 lbs/hr and 7.63 TPY of NO<sub>x</sub> emissions.**VOC EMISSIONS**Uncontrolled/Actual

Emission factor for VOC is 0.30 lb/ton based on AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-2, VOC, Carbon Monoxide, and Lead Emissions Factors for Glass Manufacturing.

$$0.30 \text{ lbs/ton glass} \times 410 \text{ lbs glass/hr} \times \text{ton}/2000 \text{ lbs} = 0.0615 \text{ lbs/hr}$$

$$0.0615 \text{ lbs/hr} \times 5000 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 0.15375 \text{ tons/yr}$$
Maximum

$$0.0615 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 0.27 \text{ tons/yr}$$
Allowable

We propose BAT as 0.0615 lbs/hr and 0.27 TPY of VOC emissions.

**CO EMISSIONS**Uncontrolled/Actual

Emission factor for CO is 0.20 lb/ton based on AP - 42, 1995, Chapter 11, Mineral Products Industry, Table 11.15-2, VOC, Carbon Monoxide, and Lead Emissions Factors for Glass Manufacturing.

$$0.20 \text{ lbs/ton glass} \times 410 \text{ lbs glass/hr} \times \text{ton}/2000 \text{ lbs} = 0.041 \text{ lbs/hr}$$

$$0.041 \text{ lbs/hr} \times 5000 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 0.1025 \text{ tons/yr}$$
Maximum

$$0.041 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times \text{ton}/2000 \text{ lbs} = 0.18 \text{ tons/yr}$$
Allowable

We propose BAT as 0.04 lbs/hr and 0.18 TPY of CO emissions.

**NEW SOURCE REVIEW FORM B**

PTI Number: 02-13884 Facility ID: 0204020023

FACILITY NAME GE Lighting - Conneaut Base Plant

FACILITY DESCRIPTION Y-6 Glass Base Furnace. CITY/TWP Conneaut

**Permit To Install Synthetic Minor Write-Up**

**NONE**

**Please fill in the following for this permit:**

**TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	2.19
NOx	7.63
SO <sub>2</sub>	5.03
VOC	0.27
CO	0.18