Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT NO. V-01-020
PHILIPS LIGHTING COMPANY
DANVILLE, KENTUCKY
MAY 17, 2002
GENELLE K. FARLEY, REVIEWER
PLANT I.D. # 021-021-00001
APPLICATION LOG # 50253

SOURCE DESCRIPTION:

Philips Lighting Company is an existing source located in Danville. This plant operates a glass manufacturing facility from lime and lead. The lime glass process is mixed with other raw material and melted in a lime regenerative melting furnace, which produces lime glass for the manufacturing of incandescent bulbs and tubing. The lead glass tubing process is the same as the lime. There is a bulb-forming machine, which extracts hot molten chips of glass to avoid producing defective bulbs. Mold stripping tanks are used to clean the molds. The recycling of broken, scrap, or rejected lime is crushed and aided with the use of a cullet conveying machine. Two annealing ovens are used to relieve the stresses caused by the process.

COMMENTS:

01 (01) Lime glass batch mixing and handling

Description: Several types of raw material are received in bulk by railcar or trucks. The material is either transported pneumatically or with bucket elevators to storage silos in the mix house where it is held until measuring and mixing. The emissions are captured and vented to a baghouse.
Construction/ modification commenced: 1990

APPLICABLE REGULATIONS:
401 KAR 59:010 New process operations.

COMMENTS:
Particulate emissions are controlled by a baghouse that has a 98% design efficiency. Particulate emissions were estimated using the emission factor from KYEIS. The particulate emission's allowable was adjusted to avoid a PSD review.

02 (02) Lead glass batch mixing and handling

Description: Several types of raw material are received in bulk by railcar or trucks. The material is either transported pneumatically or with bucket elevators to storage silos in the mix house where it is held until measuring and mixing. The emissions are captured and vented to a baghouse.
Construction/ modification commenced: 1990

APPLICABLE REGULATIONS:

401 KAR 59:010, New process operations.

COMMENTS:

Particulate emissions are controlled by a baghouse that has a 99% design efficiency. Particulate emissions were estimated using the emission factor from KYEIS. The lead emissions were below the adjusted significant level of regulation 401 KAR 63:022.

03 (03) Lime glass melting furnace

Description: It is a natural gas side port regenerative melting furnace which produces lime glass for the manufacture of incandescent bulbs and tubing. The furnace uses natural gas as primary fuel with number 2 fuel oil and propane as back up fuels.
The total heat input of the furnace burners is 50 million Btu/hr.
Construction commenced: 1990

APPLICABLE REGULATIONS:

401 KAR 59:010, New process operations

COMMENTS:

Emissions from the lime glass melt furnace are uncontrolled. Emission factors were obtained from AP-42. The particulate emission's allowable was adjusted to avoid a PSD review.

04 (04) Lead glass melting furnace

Description: It is a natural gas side port regenerative melting furnace which produces lead glass for the manufacture of glass tubing. The furnace uses natural gas as primary fuel with propane as back up fuel.
The total heat input of the furnace burners is 30 million Btu/hr.
Construction/ modification commenced: 1995

APPLICABLE REGULATIONS:

401 KAR 60:005 is governed by 40 CFR 60, Standards of performance for new stationary sources, Subpart CC, Standards of performance for glass manufacturing plants.

COMMENTS:

Particulate emissions from the lead glass melt furnace are controlled by an electrostatic precipitator with a 95% design efficiency. Emission factors were obtained from AP-42. The lead emissions were tested and were found to be below the adjusted significant level of regulation 401 KAR 63:022.

06 (06) Bulb forming

Description: This is a ribbon machine equipped with a chipper sucker to extract hot molten chips of glass to avoid producing defective bulbs.
Construction commenced: 1969

APPLICABLE REGULATIONS:

401 KAR 61:020, Section 3(1)(a), Existing process operations applicable to each emission unit which commenced construction before July 2, 1975.

COMMENTS:
Particulate emissions from the bulb forming process are controlled by a single cyclone with a 95% design efficiency. Emission factors were obtained from KYEIS.

08 (08) Mold stripping tank

Description: This is a dip stripping tank to clean the molds.
The tank has the capacity to hold 150 gallons.
Construction commenced: 1952

APPLICABLE REGULATIONS:
401 KAR 61:020, Section 3(1)(a), Existing process operations applicable to each emission unit which commenced construction before July 2, 1975.
401 KAR 63:021, Existing sources emitting toxic air pollutants.

COMMENTS:
Emissions from the mold stripping tanks are uncontrolled. Emission factors were obtained from KYEIS. The sodium hydroxide emissions were above the adjusted significant level. The emissions were modeled and an allowable of 1.17 lbs/hr was established.

13 (13) Cullet conveying

Description: Cullet which consists of broken, scrap, or rejected lime glass is crushed and returned to the mix house for reuse in the mixing/melting operation. Particulate emissions are controlled by two baghouses.
Construction commenced: 1969

APPLICABLE REGULATIONS:
401 KAR 59:010, New process operations.

COMMENTS:
Particulate emissions are controlled by a baghouse with a 98% design efficiency. The particulate's emission factor used to estimate emissions was 10 lbs/ton.

14 (14) Lead glass crusher

Description: Particulate emissions from the lead glass crusher are controlled by a baghouse.
Construction commenced: 1969

APPLICABLE REGULATIONS:
401 KAR 61:020, Section 3(1)(a), Existing process operations applicable to each emission unit which commenced construction before July 2, 1975.

COMMENTS:
Particulate emissions are controlled by two baghouses with a 99% design efficiency. The particulate's emission factor used to estimate emissions was 20 lbs/ton.

17 (17) Two lehr ovens

Description: The continuous annealing lehrs are used to relieve the stress. The combined heat input for both ovens is 15 mmBtu/hr. Natural gas is the primary fuel with propane serving as a back up.
Construction commenced: 1969 and 1995

APPLICABLE REGULATIONS: None

COMMENTS:
Emissions result from combustion of natural gas. The emission factors were obtained from AP-42. Emissions are uncontrolled.

32 (32) Two mold stripping tanks

Description: Two dip stripping tanks to clean the molds.
The tanks have the capacity to hold 150 gallons, each.
Construction commenced: 1995

APPLICABLE REGULATIONS:
401 KAR 59:010, New process operations.
401 KAR 63:021, Existing sources emitting toxic air pollutants.

COMMENTS:
Emissions from the mold stripping tanks are uncontrolled. Emission factors were obtained from KYEIS. The sodium hydroxide emissions were above the adjusted significant level. The emissions were modeled and an allowable of 1.17 lbs/hr was established.

EMISSION AND OPERATING CAPS DESCRIPTION:

Operation shall not exceed the following amounts for these emission points:

EP01	17.1	tons/hr	EP13	6.0	tons/hr
EP02	1.8	tons/hr	E14	4.25	tons/hr
EP03	15.6	tons/hr			

For EP08, 70% sodium hydroxide solution usage rate shall not exceed 0.40 gal/hr (0.80gal/hr for EP32) based on 24-hr average.

For EP17, the two Lehr ovens shall not use propane for more than 1850 hours/year.

PERIODIC MONITORING:

The plant shall monitor the following for a 12-month production total:
1) Raw materials

2) Hours of operation
3) Particulate emission
4) Monthly usage rates of cleaner and caustic.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.