

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
FIELD OPERATIONS - AIR QUALITY CONTROL

OPERATING PERMIT

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the rules and regulations of the Department of Environmental Resources, the Department hereby issues this permit for the operation of the air contamination source(s) described below.

Permit No.	<u>OP-15-0019</u>	Source(s) Facility	<u>NOx & VOC RACT</u>
Owner	<u>PECO Energy Company</u>	Air	<u></u>
Address	<u>2301 Market Street</u>	Cleaning	<u></u>
	<u>P.O. Box 8699, Phila., PA 19101</u>	Device	<u></u>
Attention	<u>Mr. W. F. McElroy</u>	Location	<u>Cromby Generating Station</u>
	<u>Acting Director, Env. Affairs</u>		<u>Township Line and Cromby Road</u>
			<u>Phoenixville, Chester County</u>

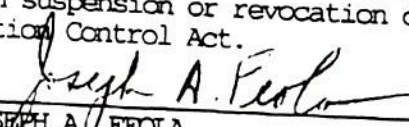
This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning devices are to be:
 - a. operated in such a manner as not to cause air pollution;
 - b. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner named above.

(SEE THE ATTACHED ADDITIONAL CONDITIONS)

Failure to comply with the conditions placed on this permit is a violation of Section 127.25. Violation of this or any other provision of Article III of the rules and regulations of the Department of Environmental Resources will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued 04/28/95


JOSEPH A. FEOLA
Air Pollution Control Manager

cc: Central Office
Southeast Regional Office

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Conditions (continued):

3 The Operating Permit No. OP-15-0019 is issued to PECO Energy Company (PECO) for the operation of Nitrogen Oxides (NOx)/Volatile Organic Compound (VOC) emission sources regulated under 25 Pa. Code §§ 129.91-95 at the Cromby Generating Station. This permit specifies PECO's Reasonably Available Control Technology (RACT) requirements for Sources of Volatile Organic Compounds and Oxides of Nitrogen.

4 Facility Inventory

The purpose of the operating Permit is to establish NOx/VOC RACT for PECO's Cromby Generating Station to reduce emissions of ozone precursors. This permit covers the following sources, located on Township Line and Cromby Road in Phoenixville, Chester County.

<u>Emission Sources</u>	<u>Rated Capacity</u>
- Coal Fired Boiler No.1	1537 MM BTU/HR
- Oil, Natural Gas Fired or Cofired Boiler No. 2	2300 MM BTU/HR
- Auxiliary Boiler	42 MM BTU/HR
- Emergency Diesel Generator	28.7 MM BTU/HR

6. Cromby Unit No. 1

A. Source Description

Cromby unit No. 1 is a wall-fired Babcock and Wilcox (B & W) coal burning boiler consisting of a divided dry bottom type furnace of balanced draft design.

B. Control Equipment

(1) NOx emissions from units No. 1 shall be controlled by the Low-NOx burners and Separated Overfire Air (SOFA) to comply with presumptive RACT requirements of 25 PA Code § 129.93(b)(1) and constructed in conformance with the schedule included in Condition 6E.

(a) The B&W Low-NOx firing system consists of sixteen (16) Low-NOx burners, the DRB-XCL (Axial Control Low NOx) type and employs a high degree of staging.

(b) The B&W Advanced Overfire Air Supply System includes a total of six (6) dual air zone NOx ports designed to provide optimum mixing of air in the second stage of combustion.

C. Operating Requirements

(b) The fuel may not contain detectable levels of pesticides and/or herbicides.

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Conditions (continued):

D. Stack Emission Limitations

- (1) Maximum air contaminant emissions from the source controlled by the equipment above shall be limited to:
 - (c) Volatile Organic Compounds (VOCs): 0.003 LB/MMBTU and 25 Tons/Year whichever is more stringent. Final VOC mission limits shall be established for the unit based on the results of the emission test to be conducted in accordance with Condition 6F.
 - (d) NOx emissions from the source: The maximum of 0.50 pounds or less per MM BTU of heat input on a 30 day rolling average.
- (2) The Department may establish more restrictive RACT emission limits including a daily average after installation of NOx control based on the following:
 - (a) Final NOx emission limits shall be established for Cromby Unit No. 1 through the use of Department approved Continuous Emission Monitoring System (CEMS).
 - (b) Final NOx emission limits shall not exceed limits of 6.D.(1)(d).

E. RACT Implemetation Schedule

Implementation of the approved NOx control technology for unit No. 1 was scheduled to be completed no later than May 31, 1995. The control technology was installed in May 1994 and therefore is in compliance with RACT requirements of 25 PA Code §129.91(f).

F. Testing Requirements

- (1) PECO must perform VOC Emission Test on the source covered in this operating Permit Condition in accordance with the provisions of Chapter 139 to demonstrate compliance with RACT Emission Limit Requirements. The test shall be performed within 60 days of this operating permit issuance while the aforementioned source is operating at a load of not less than 95% of the maximum rated gross electrical capacity.
- (3) At least sixty (60) days prior to the test(s), the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.
- (4) At least thirty (30) days prior to the test(s), the Regional Air Pollution Control Engineer shall be informed of the date and time of the test.
- (5) Within (30) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Pollution Control Engineer for approval.

G. Continuous Monitoring Requirements

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Conditions (continued):

- (1) Department Certified Continuous Emission Monitoring System (CEMS) shall be installed on Cromby Unit No. 1 to provide Monitoring for SO₂, CO₂, NO_x and opacity.
- (2) CEMS shall be approved by the Department and installed, operated and maintained in accordance with the Department's "Continuous Source Monitoring Manual", Revision No. 5.
- (3) CEMS shall contain NO_x analyzer. The analyzer in conjunction with Department-approved KVB Data Acquisition System shall quantify emissions in pounds NO_x per million BTU of heat input to demonstrate compliance with conditions 6.D.(1)(d).
- (4) CEMS shall be performance tested to demonstrate acceptability in accordance with Department's "Continuous Source Monitoring Manual".
- (5) Phase III Department approval must be obtained within sixty (60) days of achieving 95% of the maximum rated gross electrical capacity.
- (6) The continuous emission monitoring system shall be maintained and operated to achieve the following data availability requirements of 25 PA Code §139.101(12):

Monitored Pollutant or Parameter

Requirement	Carbon Dioxide & NO _x
Data Availability:	>=95% valid hours/calendar quarter or >=90% valid hours/calendar month
Valid Hour:	>=75% valid readings/hr

H. Recordkeeping and Reporting Requirements

- (1) The owner shall record the fuel throughput on a daily basis.
- (2) PECO shall verify and record the following fuel characteristics on a monthly and as-delivered basis:
 - (b) Heat content in MM BTU/LB
- (3) The company shall generate a summary of daily NO_x emission rates in lbs NO_x/MM BTU on a 30 day rolling average to demonstrate compliance with the condition 6.D.(1)(d).
- (4) The permittee shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NO_x/VOC RACT requirements of 25 PA Code §§129.91-129.94.

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Conditions (continued):

- (5) The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §§129.91-129.94 are met.
- (6) Data required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.
- (7) Records shall be retained for at least two years and shall be made available to the Department on request.

7. Cromby Unit No. 2

A. Source Description

Unit No. 2 is a Tangentially fired Combustion Engineering oil and gas burning boiler consisting of two (2) similar dry bottom type furnaces.

B. NOx Control

NOx emissions from unit No. 2 shall be reduced by Air Biasing technique which involves air staging to the upper compartments in the windbox to create a function of Close Coupled Overfire Air (CCOFA).

C. Operating Requirements

- (1) The boiler covered under this Operating Permit condition shall burn fuel oil, natural gas or cofired gas and fuel oil.

D. Stack Emission Limitations

(1) Maximum air contaminant emissions from the source shall be limited to:

- (b) Volatile Organic Compounds (VOCs): 0.002 LB/MM BTU and 6.2 Tons/Year whichever is more stringent.
- (c) NOx emissions from the source: Hourly rate of 0.30 LB/MMBTU as a 24 hour average while burning fuel oil, or 0.21 LB/MMBTU as a 24 hour average while burning natural gas, or a 0.28 LB/MMBTU as a 24 hour average while co-firing both fuels; 0.30 LB/MMBTU 30 day rolling average while burning fuel oil or, 0.21 LB/MMBTU 30 day rolling average while burning natural gas, or a 0.28 LB/MMBTU 30 day rolling average while co-firing both fuels, and 1,287 tons per year on a 12 month aggregate for a calendar year, whichever is more stringent.

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Conditions (continued):

- (2) The Department may establish lower RACT emission limits after implementation of NOx control based on the following:
 - (a) Final NOx emission limits shall be established for Cromby Unit No. 2 through the use of Department-approved Continuous Emission Monitoring System (CEMS).
 - (b) Final NOx emission limits shall not exceed limits of 7.D.(1)(c).

E. RACT Implementation Schedule

Implementation of the approved NOx controlled technology for this unit shall be completed no later than May 31, 1995 to comply with RACT requirements of 25 PA Code §129.91(f).

F. Testing Requirements

- (1) PECO must perform VOC Emission Test on the source covered in this operating Permit Condition in accordance with the provisions of Chapter 139 to demonstrate compliance with RACT Emission Limit Requirements. The test shall be performed within 60 days of the unit's restart while the aforementioned source is operating at a load of not less than 95% of the maximum rated gross electrical capacity.
- (2) At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure collection of representative samples.
- (3) At least thirty (30) days prior to the test, the Regional Air Pollution Control Engineer shall be informed of the date and time of the test.
- (4) Within (30) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Pollution Control Engineer for approval.
- (5) The PECO shall, upon Department request, provide fuel analyses, or fuel samples, of the fuel used in the aforementioned boiler(s).

G. Continuous Monitoring Requirements

- (1) Department Certified CEMS shall be installed on Cromby unit No. 2. The system shall include, but not be limited to the following:
 - (a) NOx monitor to record the hourly NOx emission rate.
 - (b) CO2 monitor to record the hourly CO2 emission rate.
 - (c) Flow monitor to record the flue gas volumetric rate.

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Conditions (continued):

- (2) CEMS shall be installed, operated and maintained in accordance with the Department's "Continuous Source Monitoring Manual", Revision No. 5.
- (3) The NOx monitor and flue gas flora monitor shall be certified by the Department. The NOx missions shall be reported in pounds/hour and in pounds per MM BTU to demonstrate compliance with condition 7.D.(1)(c).
- (4) CEMS shall be performance tested to demonstrate acceptability in accordance with Department's "Continuous Source Monitoring Manual".
- (5) Phase III Department approval must be obtained within sixty (60) days of achieving 95% of the maximum rated gross electrical capacity.
- (6) The continuous emission monitoring system shall be maintained and operated to achieve the following data availability requirements of 25 PA Code §139.101 (12)

Monitored Pollutant or Parameter

Requirement	Carbon Dioxide, Flow, and NOx
Data Availability:	>=95% valid hours/calendar quarter or >=90% valid hours/calender month
Valid Hour:	>=75% valid readings/hr

- (7) PECO shall use the method provided in 40 CFR §§75.31-33 for volumetric flow and NOx emissions to supplement any data not captured by the CEMS required for Cromby Units No. 2. The CEMS along with any missing data determined under this condition will be used to determine compliance with 7.D. (1) (c) .

H. Recordkeeping and Reporting Requirements

- (1) The owner shall record the fuel throughput on daily basis.
- (2) PECO shall verify and record the following fuel oil characteristics on a monthly and as delivered basis:
 - (a) Sulfur content by weight
 - (b) Heat content in MM BTU/gal

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Conditions (continued):

- (3) PECO shall establish NO_x Emissions Tracking system to document compliance with condition 7.D.(1)(c) above. The tracking system must be approved by the Department and shall include, but not be limited to the following information:
 - (a) Heat input in MMBTU/HR on a 24 hour average and on a 30 day rolling average
 - (b) Hours of operation
 - (c) Flue gas flow and contaminants concentration
 - (d) Fuel usage on daily basis
- (4) The company shall generate a summary of daily NO_x emission rates in lbs NO_x/MM BTU on a 24 hrs average and on a 30 day rolling average and 12 month aggregate for calendar year NO_x emissions in Tons/year to demonstrate compliance with condition 7.D(1)(c).
- (5) The permittee shall maintain a file containing all of the records and other data that are required to be collected to demonstrate compliance with NO_x/VOC RACT requirements of 25 PA Code §§129.91-129.94.
- (6) The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §§129.91-129.94 are met.
- (7) Data required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.
- (8) Records shall be retained for at least two years and shall be made available to the Department on request.

8. Cromby Auxiliary Boiler

A. Source Description

A Babcock and Wilcox auxiliary boiler rated at 42 MMBTU/HR contains a single burner and burns No. 2 fuel oil.

B. Operating Requirements

- (1) The Company shall properly maintain the boiler by following the steps necessary to comply with presumptive RACT requirements of 25 PA Code §129.93(b)(2) and (3):
 - (a) The Company shall conduct an annual tune-ups on the combustion unit. This adjustment shall include, but not limited to the following:

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Conditions (continued):

- (i) Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.
- (ii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx and to the extent practicable minimize emissions of CO.
- (iii) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

The source shall also be operated and maintained in accordance with good air pollution control practices.

- (b) The Company shall record each adjustment conducted under the procedures in paragraph (a) in a permanently bound log book or other method approved by the Department. This log shall contain, at a minimum, the following information:

- (i) The date of the tuning procedure.
- (ii) The name of the service company and technicians.
- (iii) The final operating rate or load.
- (iv) The final CO and NOx emission rates.
- (v) The final excess oxygen rate.

- (2) PECO shall only burn fuel oils designated as No. 2 distillate (viscosity of 5.82cSt or less/or lighter). Fuel oil shall not exceed 0.3% Sulfur content by weight as required by 25 PA Code §123.22 (e) (2).

C. Emission Limitations

The maximum air contaminant emissions from the source shall be limited to:

PM: 0.4 pounds per million BTU of heat input as required by 25 PA Code §123.11 (a)(1).

D. RACT Implementation Schedule

PECO shall on or before May 31, 1995 initiate annual tune-ups required in 8.B.(1) for the auxiliary boiler:

E. Testing Requirements

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Conditions (continued):

PECO shall conduct annual tune-up testing as necessary to comply with Condition 8.B(1).

F. Recordkeeping and Reporting Requirements

- (1) The Company shall upon Department request, provide fuel analysis or fuel samples of the fuel used in the boiler as required by 25 Pa Code Section 129.93(b)(4).
- (2) The permittee shall maintain a file containing all of the records required in 8B(1)(b) to demonstrate compliance with 8B(1)(a).
- (3) Records shall be retained for at least two years and shall be made available to the Department on request.

9. Diesel Generator

A. Source Description

Cromby emergency diesel generator is a General Motors diesel internal combustion engine rated at 28.7 MM BTU of heat input and 2,750 KW of electric capacity.

B. Capacity Factor Limitation

The capacity factor as defined for PECO is the ratio of net electrical power generation for the last twelve (12) months to the maximum electric power generation capability for the same last twelve (12) months for the source.

A rolling 12 month capacity factor is expressed as:

Last 12 months net generation (MWH)

Maximum net capacity of the unit (MW) x 24 hours/day x No. of days in last 12 months.

The 12 month rolling capacity factor of the emergency diesel generator shall be less than 5%.

C. Presumptive RACT

The diesel generator shall conform with the presumptive RACT requirements of 25 PA Code §129.93(c). The presumptive RACT requirements of §129.93 (c) are that the source shall be installed, maintained, and operated in accordance with manufacturer's specification. The source shall also be operated and maintained in accordance with good air pollution control practices.

D. Recordkeeping Requirements

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Conditions (continued):

The company shall record the following information for the source covered under this operating permit:

- (1) Monthly electrical power (MWH) generated for the unit so that compliance with conditions 9B can be determined.
- (2) Annual reports of fuel consumption and hours of operation of the diesel generator shall be available to the Department.
- (3) Records required under this Operating Permit shall be kept for a period of two (2) years and shall be made available to the Department upon its request.

