UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

Timothy Hunstead, Vice-President & CFO
NRG Generating (Schuylkill) Cogeneration, Inc.
Grays Ferry Cogeneration Partnership
2600 Christian Street
Philadelphia, PA 19146

Dear Mr. Hunstead:

This letter represents U.S. EPA's official determination of applicability under the Acid Rain Program for the combined cycle unit and auxiliary boiler #25 at the Grays Ferry project ("Grays Ferry," ORIS plant code 7337) in Pennsylvania, which is owned by Grays Ferry Cogeneration Partnership, operated by Philadelphia United Power Corporation, and scheduled to commence commercial operation December 1997. This determination is made in response to the June 14, 1996 letter and attachments sent by Roger K. Raufer (air quality consultant to the Grays Ferry Cogeneration Partnership) to Linda Miller, U.S. EPA Region 3. The June 14, 1996 letter to U.S. EPA Region 3 is being treated as a formal petition for an applicability determination by U.S. EPA under 40 CFR 72.6(c), as Mr. Leonard A. Bluhm, former President of Grays Ferry Cogeneration Partnership, requested in a November 1, 1996 letter to Robert Miller, U.S. EPA's Acid Rain Division. As discussed below, U.S. EPA has determined that the combined cycle unit and auxiliary boiler #25 at Grays Ferry are unaffected units under 40 CFR 72.6(b)(4) (cogeneration facilities), provided that they are operated in a manner consistent with the requirements of that section. However, U.S. EPA has also concluded that 40 CFR 72.6(b)(5) or (6) (qualifying facilities and independent power production facilities, respectively) does not apply to these units.

According to the description in Mr. Raufer's letter and supporting information, Grays Ferry is an independent power production facility combined cycle unit with a 135 MW combustion turbine (CT), duct burners, heat recovery steam generator (HRSG), and a 54 MW steam turbine generator also capable of being served by auxiliary boiler #25 for a total of 189 MW maximum capacity for the plant. Oil or gas is combusted in the CT. The exhaust from the CT is ducted into the HRSG, where oil or gas is combusted through duct burners to increase steam production from the HRSG, which in turn produces electricity at the steam turbine generator and then is used for heating purposes. Similarly, for the auxiliary boiler, oil or gas is combusted to produce steam, most of which is used for heating purposes and some of which is used to generate electricity at the steam turbine generator and then for heating purposes. The energy produced by both units (i.e., the CT and boiler #25) is used for two purposes: to produce electricity and then to provide steam for the district heating system in the City of Philadelphia. Although both the CT and boiler #25 are units as defined under 40 CFR 72.2 ("fossil-fuel fired combustion devices"), they are also

cogeneration units, which "produce electric energy and forms of useful thermal energy (such as heat or steam) for industrial, commercial, heating or cooling purposes, through the sequential use of energy." Since some of the heat or steam combusted at each unit is used to produce electricity and is then used for heating purposes, the use of the energy is "sequential" as that term is applied in the definition of "cogeneration unit" in 40 CFR 72.2.

Under 40 CFR 72.6(b)(4)(ii), a cogeneration unit for which construction commenced after November 15, 1990 that supplies an annual average of no more than 219,000 MWe-hours of actual electric output or no more than one-third of its potential electrical output capacity to a utility power distribution system on an annual basis is not considered a utility unit and is therefore not considered an affected unit under the Acid Rain Program.

Construction commenced on Grays Ferry August 1993. The combined cycle unit (meaning the CT, duct burners, HRSG, and steam turbine generator) has a potential electrical output capacity (PEOC) of 198.2 MWe.[1] One-third of the unit's PEOC is therefore 578,744 MWe-hrs.[2] If, in the first year of operation, or for any three year calendar period on an annual basis thereafter, this unit provides more than 578,744 MWe-hrs of actual electrical output to a utility power distribution system for sale, then it will become an affected unit. As an affected unit, the unit will have to comply with all applicable requirements under the Acid Rain Program, including the requirements to apply for and receive an acid rain permit (under 40 CFR part 72) and to monitor and report emissions (under 40 CFR part 75).

As noted above, auxiliary boiler #25 supplies steam to the district heating system and to the 54 MW steam turbine generator. Boiler #25 has a maximum design heat input capacity of 1075 mmBtu/hr and a PEOC of 94.5 MWe,[3] one-third of which is 275,940 MWe-hrs.[4] Therefore if, in the first year of operation, or for any three year calendar period on an annual basis thereafter, auxiliary boiler #25 provides steam that results in the generation of more than 275,940 MWe-hrs

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[1] PEOC for the combined cycle unit was calculated by adding the maximum design heat input capacities of 1452.5 x 10^6 Btu/hr. for the combustion turbine and 366 x 10^6 Btu/hr. for the duct burners (1818.5 x 10^6 Btu/hr total), multiplying by 37.2% (the efficiency of the unit as asserted by petitioner), dividing by 3413 and again by 1000 to arrive at figure above in MWe. See 40 CFR 72 Appendix D and February 1994 U.S. EPA guidance "Do the Acid Rain SO_2 Regulations Apply to You" for explanation of how to calculate PEOC. According to information submitted to U.S. EPA, the maximum design heat input capacity of the combined cycle unit and the auxiliary boiler vary depending on whether gas or oil is burned. U.S. EPA is making this applicability determination based on the lowest maximum design heat input capacity for each unit.

[2] This figure is calculated by multiplying the PEOC by 8760, the number of hours in a year, and then dividing by 3. See 40 CFR 72.6(b)(4)(ii).

[3] PEOC for boiler #25 was calculated by multiplying the maximum design heat input capacity of the boiler (1075 x 10^6 Btu/hr) by 30% (the efficiency of the boiler as asserted by petitioner), dividing by 3413 and again by 1000 to arrive at figure above in MWe.

[4] See footnote number 2.

of actual electrical output provided to a utility power distribution system for sale, then it will become an affected unit. According to the petitioner, boiler #25's primary purpose is to provide steam to the City, and usually provides steam to the steam turbine generator only when the combustion turbine is not operating. The petitioner states that boiler #25 will therefore generate on average about 22,894 MWe-hrs of electricity annually, well below the 275,940 MWe-hrs threshold necessary for this cogeneration unit to be considered a utility unit, as mentioned above.

Lastly, the petitioner suggested an alternative basis, under 40 CFR 72.6(b)(5) or (6), for finding that the combined cycle unit and auxiliary boiler #25 at Grays Ferry are unaffected units. U.S. EPA has concluded that these provisions do not apply to the combined cycle unit and auxiliary boiler #25 because Grays Ferry lacks a qualifying power purchase commitment as defined in 40 CFR 72.2. Specifically, Grays Ferry did not demonstrate that a power purchase commitment (also defined in 40 CFR 72.2) was in effect as of November 15, 1990. Although the Grays Ferry petition did include power sales agreements dated July 28, 1992, such agreements could only be considered power purchase commitments if a letter of intent dated November 15, 1990 or earlier had preceded such agreements. Such a letter has not been provided to U.S. EPA. The Memorandum of Understanding dated May 9, 1990 that was included in the June 14, 1996 petition does not constitute such a letter because it is an agreement between parties, who were initially interested in developing two separate cogeneration facilities, to negotiate joint development of a single cogeneration facility. The Memorandum did not require the sale of electricity, much less set a price for such a sale. Indeed, the Memorandum indicated that no "binding long term electric purchase contract" had yet been executed. May 9, 1990 Memorandum of Understanding at 3 (paragraph H); see 40 CFR 72.2 (paragraph (3) of definition of "power purchase commitment").

This determination is based on the representations in correspondence dated June 14, 1996, November 1, 1996, November 26, 1996, February 19, 1997, and April 1, 1997, and subsequent telephone conversations with Roger K. Raufer, is made in reliance on the accuracy and completeness of those representations, and is appealable under 40 CFR part 78. The applicable regulations require you to send copies of this letter to each owner or operator of Grays Ferry (40 CFR 72.6(c)(1)). If you have further questions regarding the Acid Rain Program, please contact Robert Miller at (202) 233-9077.

Sincerely,

/s/ (August 18, 1997)

Brian J. McLean, Director
Acid Rain Division

cc: Bob Scott, City of Philadelphia
Linda Miller, U.S. EPA Region 3