UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 Broadway
New York, NY 10007-1866

March 19, 2002

Dr. Iclal Atay, Chief
New Jersey Department of
Environmental Protection
Bureau of Air Quality Engineering
401 East State Street, CN027
Trenton, NJ 08625-0027

Reference: Determination on Applicability of PSD/WEPCO Rule for Existing Five Combined-Cycle Combustion Turbines at Cogen Technologies, Union County, New Jersey, ID # 40955

1) Installation of 2055 Degrees F Upgrade Kit
PCP # 01-0001 through 01-0005

2) Installation of Inlet Air Fogging System
PCP # 01- 0006 through 01-0010

Dear Dr. Atay:

The purpose of this letter is to respond to your December 12, 2001 letter requesting EPA concurrence on your preliminary determination not to seek additional PSD review regarding two physical changes made at the Cogen Technologies, L.P., Linden Venture (Linden Cogen) facility. The Linden Cogen facility is an existing major source with a PSD and nonattainment major NSR permit. We do not agree that the information provided supports a finding that the changes are routine maintenance, repair or replacement, we understand that the State believes the source has shown that the changes will not result in a significant emissions increase.

At the outset, let me express my concern regarding the process under which these changes are being reviewed. The appropriate time to determine whether or not changes to a facility will trigger a regulatory requirement is before the changes are made. This is not the case in this instance. EPA does not make it a practice to conduct after-the-fact applicability determinations. Accordingly, any finding we make in this letter should not be construed in any way as absolving the source of liability for possible failures to comply with NSR requirements.

.

Background Information Presented by Linden Cogen

Linden Cogen currently operates five combined-cycle gas turbine units that generate 715 MW electricity and steam at Railroad and Chemico Avenue, Linden, Union County, New Jersey. Electricity from the facility is sold to Consolidated Edison in New York, and to the Pennsylvania, New Jersey, and Maryland electrical grid. The steam is sold to the Bayway Refinery. Each unit consists of a General Electric Model turbine PG 7111 EA with 89 MW capacity and maximum input capacity of 1,020 MMBTU/hr and a duct-fired heat recovery steam boiler. The design heat input capacity of each duct burner is 368 MMBTU/hr. The exhaust gases from the 5 turbines and the 5 duct burners are vented through two 190-foot stacks.

Linden Cogen made two physical changes during Spring 2001. The first change consisted of installing a GE operating kit, referred to as a "2055 degrees F Upgrade" kit on each of the five turbines. The kit components replace existing components and enhance fuel efficiency, turbine combustion efficiency and overall performance. The installation of the kit included the replacement of the cooling stage, stage-2, and stage-3 of the turbines. The installation of the kit improved the heat rate to the turbine by 2.45% and the turbine output by 4.9%. The installation of the kit increased heat input rate by 23 MMBTU/hr, HHV during natural gas combustion at 54 degrees F and 59.7 MMBTU/hr, HHV during butane combustion at 54 degrees F.

The second change at the facility consisted of the installation of inlet air fogging systems on each of the five turbines. Air fogging involves cooling of the inlet air to the combustion turbine. The cooling of the inlet air increases the air density or mass flow through the turbine compressor, allowing more fuel consumption and greater power output. The estimated duration of operation of the inlet air fogging system is 600 hours per year.

Discussion

In a letter dated June 22, 2001, to New Jersey, Linden Cogen, states that "regarding the increase in maximum hourly heat input of the five existing Linden Gas Turbine units and the inlet air fogging project..., both have been implemented to improve turbine performance and efficiency." In addition, according to Linden Cogen the project was performed to "improve performance, efficiency, and will result in emissions increases (albeit below PSD significance levels)."

For PSD purposes, the definition of "major modification" at 40 CFR 52.21 (2) (iii) excludes routine maintenance, repair or replacement. Linden Cogen takes the position that "although the '2055 degrees F Upgrade' kit would improve turbine performance, the 'like-kind' replacement of the turbine components is considered routine." The EPA, however, does not agree. The replacement of existing components with functionally similar or "like-kind" new components does not determine what constitutes routine maintenance, repair and replacement. To determine if a physical change is routine or not, the nature, extent, purpose, frequency and cost of the physical change and other relevant factors are considered to come to a common sense finding. A further discussion of these factors is contained in EPA's May 23, 2000 response to Detroit Edison concerning their proposed "Dense Pack" project, a copy of which may be found at

http://www.epa.gov/rgtgrnj/programs/artd/air/nsr/nsrmemos/detedisn.pdf/. The extent to which a project is a "like-kind" replacement, however, can be considered along with all relevant factors in determining if a physical change is routine or not.

Linden Cogen has not provided sufficient information in regard to the relevant factors to justify a finding that the installation of the "2055 degrees F Upgrade" kit qualifies as routine maintenance, repair and replacement. For example, although Linden Cogen states that "the replacement of the combustion chamber and turbine components with new components is done on a regular basis," it did not provide any information regarding when it undertook these types of changes at the unit (or other similar units) in the past, or at what frequency. In regard to cost, Linden Cogen provides no real cost break down of the project other than saying "exact cost comparisons are somewhat difficult to assess." It is important to note that another agency has reviewed a similar type of project and determined that in that case such an upgrade to a turbine was nonroutine. For your reference see attached the February 26, 2002 letter from the State of Washington's Department of Ecology.

Regarding the inlet air fogger changes, EPA's position is these changes are not routine maintenance, repair or replacement. For your reference, please see the letter dated April 3, 2000 from EPA Region 4 (Re: "Duke Power") which may be found at **http://www.epa.gov/rgtgrnj/programs/artd/air/nsr/nsrmemos/foggers.pdf**.

Summary

Based on the evidence provided, the EPA cannot concur with NJDEP's preliminary determination that the two physical changes made at the Linden Cogen facility should be excluded from PSD as routine changes. The information submitted by Linden Cogen is too vague and not sufficiently detailed to be useful in determining whether the installation of the "2055 F degrees Upgrade" kit to the turbines qualifies under the PSD exclusion for routine maintenance repair and replacement. In addition, EPA has determined that the installation of the inlet air foggers does represent non-routine physical change(s) to the turbines.

Nonetheless, the EPA does agree that because the combined cycle units at the Linden facility are "electric utility generating units" per 52.21(b)(31), they qualify for the "actual to future representative actual emissions" test when determining whether there is a significant net emissions increase from a change. For your reference, the August 6, 2000 letter from EPA regarding regarding this subject, may be found at **http://.www.epa.gov/rgtgrnj/programs/artd/air/nsr/nsrmemos/cgtsd.pdf.** Future representative actual emissions" are determined by the permitting agency considering, but not limited to, historical operating data, the company's own representation and all other relevant information (see 40 CFR 52.21 (b)(33)). In the information provided, the estimated emissions increases using this methodology do not appear to project a significant increase in emissions. We understand that NJDEP, after reviewing all relevant information, has accepted the emissions projections made by Linden Cogen and plans to revise the permit, pursuant to a public review process, to include necessary emissions monitoring, record keeping, and reporting requirements under 40 CFR 52.21(b)(21)(v) for a period of five-years from the date the unit(s) resume regular

operation. The EPA agrees that this is a proper course to adopt, but add that the five-year reporting time frame should be adjusted to begin after approval by the permitting authority.

The EPA, however, does not agree with the NJDEP that permit revisions to include the necessary emissions monitoring, record keeping, and reporting requirements need not be subject to public noticing requirements. It is our opinion that the public should be notified of, and be afforded the opportunity to comment on, conditions which are necessary to ensure compliance with PSD requirements

The EPA looks forward to continuing to work with the NJDEP as it proceeds to revise the permit. Please do not hesitate to call Mr. Joseph Kane, of my staff, at (212) 637-3704, if you have any questions.

Sincerely,

/s/

Steven C. Riva, Chief
Air Permitting Section
Air Programs Branch

bcc: J. Kane, 2DEPP-APB
F. Jon, 2DEPP-APB
J. Siegel, 2ORC-Air
D. Solomon, OAQPS
C. Holmes, OGC
M. Sewell, OAQPS
M. Jorquera, OECA