Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

April 18, 1997

Farzie Shelton, Environmental Coordinator
Lakeland Electric and Water
501 East Lemon Street
Lakeland, FL 33801-5050

RE: Charles Larsen Memorial Power Plant
Unit 8--Combined Cycle Gas Turbine
Permit Nos: PSD-FL-166/AC53-190437

Dear Ms Shelton:

The Department has reviewed your recent request for changes to the above referenced permit. Additional information, as discussed below, is needed before the Department can act on this request.

Item C Based on the curve (oil input Vs compressor inlet temperature) and ambient conditions at the facility from the past year, what is the maximum annual quantity of fuel oil required.

Item D Explain the rationale for requesting Method 5B. Pursuant to Method 5B Section 1, the use of this test method requires EPA approval unless specified in the applicable NSPS subpart. Has EPA approved Method 5B for Unit 8?

Item E Unit 8 has no control device for sulfuric acid mist therefore emissions are only limited by the fuel sulfur content. The BACT specified no emission limit but rather limited the available fuels to natural gas or No. 2 fuel oil with an average sulfur content not exceeding 0.2 percent. Other pollutants such as lead, mercury, and beryllium are also a function of the fuel quality. Each of these pollutants can be limited by restricting the fuels to natural gas or low sulfur No. 2 fuel oil. Carbon monoxide emissions by contrast are not only a function of clean fuels usage, but are also affected by the operation of the NO_x

control system. The BACT specifies a 25 ppmvd @ 15% oxygen. We propose to incorporate the 25 ppm BACT limit with a requirement for annual CO testing, while removing limits and testing for lead, mercury, beryllium, and sulfuric acid mist. Please provide comments on this proposed action.

Item F The averaging time for heat input rate is implied in the limit which is in terms of MMBtu/hr. These units indicate an hourly average. Heat input must be calculated on an hourly basis since compliance testing is based on three 1 hour runs while the unit is operating at capacity, i.e., the maximum heat input. What is the rationale for a 30 day rolling average for heat input?

Your request for a 24 hour rolling average for NO_x constitutes a potential relaxation of the BACT emission standard as described the following paragraphs. In order to proceed with our review of proposed amendments, it is necessary for you to submit an evaluation of a NO_x emission limit for the longer averaging time which is equivalent to the existing BACT limit. This analysis shall be sealed by a Professional Engineer licensed in the State of Florida.

Rule 17-296.405, F.A.C., entitled Fossil Fuel Steam Generators with More than 250 Million Btu per Hour Heat Input, was amended to clarify the applicability of Section 403.0872(13), Florida Statutes. The longer averaging time provided in the statute was narrowly applied to the NO_x standards in Rule 17-296.405(2) for **existing Fossil Fuel Steam Generators with More than 250 Million Btu per Hour Heat Input.** Owners of existing fossil fuel steam generators with more than 250 Million Btu per hour heat input, that are subject to continuous monitoring requirements under the Acid Rain Program, must determine compliance with nitrogen oxide emission limits based on a 30-day rolling average.

Since Rule 17-296.405, F.A.C. is not applicable to unit 8, the requirement to determine compliance based on a 30-day rolling average is not applicable. The Department is willing to evaluate an averaging time longer than the

current one as long as the numerical emission limit is adjusted downward as discussed below. Subpart GG of the NSPS rules and PSD apply to unit 8. The current BACT limit (25 ppm @ 15% oxygen firing natural gas) established a 1 hour averaging time (three 1 hour runs). Extension of the averaging time as proposed affords the opportunity to operate unit 8 in excess of the current BACT emission limit for short periods as long as low load operation emission rates are sufficient to average below the standard on a 24 hour rolling average. This constitutes a relaxation of the original BACT for NO_x. Since the stringency of the original BACT must be preserved, the new emission limit must be reduced to a level which equates to the original (shorter averaging time) limit.

Due to the technical nature of some of the items above, we request that your reply be reviewed and sealed by a professional engineer. It is the Department's practice that applications be submitted on the required forms and sealed in accordance with the instructions.

Please contact me at (904) 488-1344 if you have questions on these matters.

Sincerely

Martin Costello

Martin Costello, P.E.
New Source Review Section

cc: Ed Svec