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Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

May 13, 1997

Martin Costello, P.E.
New Source Review Section
Division of Air Resources Management
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

RE: Charles Larsen Memorial Power Plant
Unit 8--Combined Cycle Gas Turbine
Permit No. PSD-FL-166/AC53-190437
Response to Request for Additional Information

Dear Mr. Costello:

Lakeland Electric and Water Utilities (Lakeland) received your letter dated April 18, 1997, requesting additional information regarding our March 14 request to revise the above-referenced permit. Because Lakeland would like to resolve these pending construction permit revision issues for the Charles Larsen Memorial Power Plant (Larsen Plant) before the Title V permit becomes effective, we would like to meet with you and your staff to further discuss Lakeland's request within the next several weeks. Once the construction permit revision issues are resolved, the Title V permit can be amended accordingly. The information requested by the Department follows.

Item C - Maximum Quantity of Fuel Oil: The maximum annual quantity of fuel oil will vary from year to year and is not just a function of compressor inlet temperature and ambient conditions. As the backup fuel to natural gas, fuel oil is not used on a regular basis to establish relationships. Additionally, with year to year variability establishing a maximum fuel usage would be inappropriate. For clarification, Lakeland requests that the 8,190 gallons/hr in Specific Condition No. 6 be replaced with the curve provided with our March 14th request. The 23,914,800 gallons/year would remain as a specific condition.

Item D - Use of Method 5B: After further review, Lakeland concurs with the Department and our March 14th request to use Method 5B is rescinded.

Item E - Carbon Monoxide Limit: While Lakeland agrees that the Department's Best Available Control Technology (BACT) determination for carbon monoxide was based on an

emissions rate of 25 parts per million (ppm), the construction permit appropriately did *not* include this basis as an emissions *limit*. Rather, the construction permit included only an annual, tons-per-year limit. Because add-on pollution control equipment was found to be "not economically justifiable," BACT was determined to be proper combustion techniques. An initial compliance test was performed when Unit 8 first began operations, demonstrating that the unit was properly designed to ensure good combustion. Because this test assured that the unit could meet the annual emissions limit and no subsequent annual testing was required, Lakeland again requests that the Department delete the ton-per-year limitation for carbon monoxide. Lakeland knows of no change in circumstances to cause annual testing requirements to be imposed, and requests that, at a minimum, no additional testing requirements be included in the revised permit.

Lakeland very much appreciates the Department's willingness to remove the mass emission limitations for sulfuric acid mist, lead, mercury, and beryllium and to instead simply clarify that these emissions are limited by restricting the fuels that may be used to natural gas and low sulfur No. 2 fuel oil.

Item F - (1) Heat Input Averaging Period: Because Lakeland is requesting that the Department specify thirty-day rolling averaging periods for the nitrogen oxides emission limits, a thirty-day averaging period would also be appropriate for the heat input limit. Lakeland agrees with the Department's statement that heat input must be determined on an hourly basis; however, compliance with the heat input limit should be consistent with the averaging periods for the emission limits. In addition, the heat content of fuels fluctuates somewhat and a calculation of heat input based on fuel flow and the heating value of the fuel being combusted cannot be done instantaneously. At a minimum, a three-hour averaging period would be appropriate because of the time needed to make the calculations, although Lakeland believes that a thirty-day averaging period is justifiable and would be consistent with the requested averaging period for nitrogen oxide emissions.

Item F - (2) Nitrogen Oxides Averaging Period: Lakeland requests that the Department specify thirty-day rolling averaging periods for the nitrogen oxides emissions limits for Unit 8, consistent with Section 403.0872(13), Florida Statutes. While Lakeland understands that the Department has clarified that this statutory provision applies to existing fossil-fuel-fired steam generators, the statutory language is not limited to a particular type of electrical generating unit and

applies to combustion turbines as well as steam generators--and applies to existing as well as new units. None the less, Unit 8 is a combined cycle unit, a portion of which is an existing steam generating unit (formally Unit 5). The steam cycle for Unit 5, which had a maximum heat input of 321 mmBtu for a nominal 25 MW of generation, was used with a new combustion turbine and heat recovery steam generator (HRSG) to form Unit 8. Thus, Unit 8 is both a steam generating unit a portion had been existing since 1956. EPA has guidance indicating that combined cycle units would, in part, be classified as steam generating units (EPA Memorandum February 2, 1993, Edward Lillis, Chief Permits Programs Branch, OAQPS.)_ While the statutory language is careful to not supersede any requirements of New Source Performance Standards (NSPS), it does not limit its applicability to Best Available Control Technology (BACT) standards. Because BACT limits are often, as in the case of Larsen Unit 8, so much lower than the NSPS standards, the thirty-day rolling average could easily apply to the BACT standard without affecting compliance with a three-hour NSPS standard.

Further, the BACT analysis should not be affected by the establishment of a 30-day rolling average, since the cost-per-ton analysis is based on long-term rather than short-term emission rates. The total tons removed through selective catalytic reduction (SCR) compared to the total tons removed through use of wet injection remains the same--in excess of $6,400. This amount continues to be considered too expensive and does not justify the use of SCR. The 30-day rolling average will allow for slight variations in the nitrogen oxides concentrations, while assuring that, on average, the emissions are within the appropriate range.

The thirty-day rolling averaging period should also not be a concern from an ambient air quality perspective. As you are aware, the ambient air quality standard for nitrogen oxides is an annual average only, and while nitrogen oxides are a precursor to ozone, ozone formation is not a short-term phenomenon. A longer averaging period for nitrogen oxides should therefore not affect the ambient air quality.

Because the statute seems to require a thirty-day rolling average period when acid rain monitors are installed on a unit, ambient air quality would not be adversely impacted, and the BACT determination should not be affected, Lakeland respectfully requests that the Department specify thirty-day rolling averaging periods for the Unit 8 nitrogen oxide emission limits.

Thank you for considering this additional information. Again, we would like to schedule a meeting with you and your staff. I will contact you within the next two to three weeks to schedule a meeting to further discuss the issues addressed in this letter. If you have any questions in the meantime, please call me at 941-499-6603.

Sincerely,

Farzie Shelton
Environmental Coordinator

Signed and Sealed by:

Kennard Kosky, P.E.
Golder and Associates Inc.

cc: Howard Rhodes, DEP
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