LAKELAND
ELECTRIC & WATER

(813) 499-6603

Excellence Is Our Goal, Service Is Our Job

Farzie Shelton
ENVIRONMENTAL COORDINATOR, Ch E.

October 19, 1995

VIA HAND DELIVERY

Howard L. Rhodes, Director
Division of Air Resources Management
Department of Environmental Protection
Magnolia Park Courtyard
Tallahassee, FL 32301

RE: City of Lakeland C.D. McIntosh Unit No. 3--Requested Amendment of PSD Permit No. PSD-FL-008 and Modification of Site Certification No. PA-78-06

Dear Howard:

As you may recall, the City of Lakeland originally submitted a request to modify the Site Certification for its C.D. McIntosh Unit No. 3 on December 7, 1994, and submitted a request to revise the Prevention of Significant Deterioration (PSD) permit on January 4, 1995. The City subsequently revised its request regarding the PSD permit on April 6, 1995, while the City's request to modify the Site Certification was held in abeyance pending the outcome of the PSD permit revision request.

The City's April 6 submittal focused on the sulfur dioxide emission limit and removal efficiencies. A PSD permit amendment was subsequently issued by the Department, which has been accepted by the City, and those issues have therefore been resolved. As stated in the City's April 6 submittal to the Department and during our August 11 meeting, because those issues have been resolved, the City intends to again request that the PSD permit and Site Certification be modified to address the use of petroleum coke as a fuel. This letter and the attached documents constitute a revised request for PSD permit amendment (as described below). A separate notification to reinitiate the Department's review of the City's request for Site Certification modification is being submitted to the Department's Power Plant Siting Section.

After you and your staff have had an opportunity to review the information being provided, we would like to set up a meeting to discuss this submittal. If additional information is needed, please let us know within 30 days and we will provide you with the information immediately.

1. ***Petroleum Coke***--As you know, the City of Lakeland conducted a successful test burn of petroleum coke blended with coal and coal/refuse in 1994. In an effort to use the most cost-effective fuels while not increasing emissions above allowable limits, the City of Lakeland respectfully requests that its PSD permit be revised to allow petroleum coke to be burned when

blended with coal and other fuels. Because continuous emissions monitors have been installed for sulfur dioxide, nitrogen oxides, and opacity, as required by the PSD permit (Specific Condition No. 6), New Source Performance Standard Subpart D (40 CFR § 60.45), and the federal acid rain program (40 CFR Part 75), the City can ensure that the emission limits for these pollutants are not exceeded when petroleum coke is blended with coal or other fuels and burned in Unit No. 3.

Based on what the City of Lakeland believes to be an appropriate analysis, PSD review should not be triggered for any pollutant. While the City does not concur with the Department's prior determination that the use of petroleum coke would constitute a "physical or operational change" to the Unit No. 3 boiler, in an effort to expedite review of its request for authorization to burn petroleum coke as a fuel, the City has assumed for purposes of determining PSD applicability that the use of petroleum coke constitutes an operational change. The issue then becomes whether a significant net emissions increase will result from the use of petroleum coke.

As you know, the Department's rules require a comparison of "past actual" emissions and "representative future actual" emissions to determine whether a significant net emissions increase will occur as a result of a physical or operational change. Rule 62-212.400(2)(e)1., F.A.C. Under the Department's rules, "past actual emissions" are determined based on the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive two-year representative period during the last five years. The Department's September 11, 1995, letter to the City states that in determining "past actual" emissions for McIntosh Unit No. 3, past actual sulfur dioxide emissions should be determined based on the new sulfur dioxide emission limits along with "actual hours of operation, actual fuel combusted, capacity factors, etc." The Department's letter goes on to state that for other pollutants, past actual emissions should be based on past (or new) compliance tests, continuous emissions monitoring data, applicable inferences from the petroleum coke test burn, engineering estimates, etc. Consistent with the Department's recommendations, past actual emissions have been calculated using this type of information, as set forth in Exhibit A.

"Representative future emissions" are based on the average rate at which the emissions unit is *projected* to emit a pollutant for the two-year period after a physical or operational change. Future actual emissions are projected by multiplying (1) the hourly emissions rate, based on the unit's capabilities following the change and federally enforceable operational restrictions affecting the hourly emissions rate, and (2) the projected capacity utilization following the change, based on historical annual utilization and other available information regarding the unit's likely post-change capacity utilization (excluding utilization rate increases based on utility system growth). (40 CFR § 52.21(b)(33), incorporated by reference in Rule 62-212.200(2)(d), F.A.C.) Unit No. 3 is a base-loaded unit, and the average annual

hours of operation for Unit No. 3 over the past two years (which are representative) are 8042. Because the City does not anticipate increasing the Unit's utilization rate as a result of using petroleum coke, the most accurate comparison between past actual and future projected actual emissions would be based on short-term emission rates. Otherwise, statistically insignificant differences in short-term rates could potentially be extrapolated into statistically significant differences in annual rates. A comparison of short-term rates is more appropriate to determine whether emission increases can be expected in the future as well as whether a change in emissions will result from the use of petroleum coke.

A comparison of past actual emissions to future projected emissions of *sulfur dioxide* indicates that a net emissions increase would occur. The City, however, proposes to accept a federally enforceable emissions limit of 0.718 lb/mmBtu when burning petroleum coke to ensure that no significant net emissions increase would result. As shown in Exhibit A, the past actual emissions (calculated based on the revised PSD permit) are 7948 tons per year, at an emissions rate of 0.718 lb/mmBtu. By accepting emission limits of 0.718 lb/mmBtu and 7948 tons per year when burning petroleum coke, the future projected emissions would not increase. Because no increase in emissions occurs, PSD does not apply to sulfur dioxide emissions and BACT review is not triggered. As also shown in Exhibit A, the actual *particulate matter, nitrogen oxides, carbon monoxide, and sulfuric acid mist* emissions will also not increase as a result of petroleum coke use. Because a significant net emissions increase does not result, PSD does not apply to those emissions and BACT review is not required. PSD is therefore not triggered nor is BACT required for any pollutant.

The City therefore respectfully requests that Condition No. 2B be changed as follows:

> A flue gas desulfurization system will be installed to treat exhaust gases and will operate such that whenever coal is burned, sulfur dioxide in gases discharged to the atmosphere from the boiler shall not exceed 1.2 pounds per million Btu heat input and 10 percent of the potential combustion concentration (90 percent reduction), or 35 percent of the potential combustion concentration (65 percent reduction), when emissions are less than 0.75 pounds per million Btu heat input. Compliance with this ~~the~~ sulfur dioxide emission limitation and percent reduction requirement shall be determined on a 30-day rolling average (based on days when no petroleum coke is burned). Whenever petroleum coke is burned, sulfur dioxide emissions shall not exceed 0.718 lb/mmBtu (based on a 30-day rolling average) or 7948 tons per year.

The City also requests that a Condition No. 8 be added as follows:

8. The following fuels may be burned:

Coal only
Oil only
Coal and up to 10% refuse (based on heat input)
Oil and up to 10% refuse (based on heat input)
Coal and up to 20% petroleum coke (based on weight)
Coal and up to 20% petroleum coke (based on weight) and 10% refuse (based on heat input)

2. ***Startup Fuels***--Because, like all other coal units, Unit No. 3 must be started on natural gas or fuel oil, the City requests that the PSD permit be revised to reflect that natural gas and low sulfur fuel oil (e.g., diesel) may be burned during startup. Further, because these fuels are "clean fuels," the City also requests that the PSD permit be revised to clarify that these fuels may be burned at any time. The current permit allows the use of fuel oil in at least emergency situations, and such the permit should be revised to clarify that use is allowed at any time. The City therefore requests that the following language be included in the permit:

8. The following fuels may be burned:

. . .

Natural Gas
Low Sulfur Fuel Oil (e.g., diesel)

3. ***Permit Application***--The City has revised portions of the permit application previously submitted on January 4, 1995. An original and three copies are enclosed with this submittal (as part of Exhibit A).

Again, the City would like to thank you and your staff for your responsiveness to our requests. Please let us know if additional information is needed and we will provide the same to you immediately.

Sincerely,

Farzie Shelton/arm

Farzie Shelton
Environmental Coordinator

cc: Clair Fancy, DEP
Al Linero, DEP
Martin Costello, DEP
Hamilton S. Oven, Jr., DEP
Jewell Harper, EPA Region IV
Brian Beals, EPA Region IV
Ken Kosky, KBN
Angela Morrison, HGSS

65993