



*Excellence Is Our Goal, Service Is Our Job*  
March 14, 1997

**Farzie Shelton**  
ENVIRONMENTAL COORDINATOR, Ch E.

Clair H. Fancy, P.E.  
Chief, Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Road, MS 5505  
Tallahassee, FL 32301

**RECEIVED**

**MAR 20 1997**

**BUREAU OF  
AIR REGULATION**

RE: Lakeland Electric and Water Utilities  
Charles Larsen Memorial Power Plant  
Unit No. 8--Combined Cycle Gas Turbine System  
Permit Nos. PSD-FL-166 and AC53-190437  
Request for Permit Revision

Dear Mr. Fancy:

During the Title V permitting process for the Charles Larsen Memorial Power Plant, Lakeland Electric and Water Utilities has identified several construction permit conditions for Unit No. 8 that should be revised. While some of these changes have been incorporated into the draft Title V permit that was issued for the facility on October 23, 1996, Department representatives have indicated that other changes that were requested as part of the Title V process must first be made in the construction permit. Lakeland believes that the changes being requested are appropriate and supported by the Department's air regulations. The specific changes requested are as follows:

A. **Limits Based on Draft Ambient Reference Concentrations.** Specific Condition 2 of the construction permit for Unit No. 8 establishes emission limits for lead, mercury, and beryllium based on Florida's draft Ambient Reference Concentrations. Lakeland requests that this condition be deleted in its entirety because there is no basis under state or federal law for this requirement. The draft Ambient Reference Concentrations are established only in an unpromulgated rule, which has not been properly adopted under Chapter 120, Florida Statutes. As an unpromulgated rule, the policy should not be used as the basis to establish permit limits. Further, any concern regarding the ambient concentrations of these pollutants should have been adequately addressed during the construction permitting process and by the modeling that was submitted with the PSD permit application. Deletion of these limits would also be consistent with recent Department guidance. Unit No. 8 is permitted to burn primarily natural gas with low sulfur No. 2 distillate fuel oil (sulfur content not to exceed 0.20 percent) as a backup, and a Department guidance memorandum dated May 19, 1995, indicates that concentrations of metals such as lead, mercury, and beryllium in low sulfur distillate oil and natural gas are so low as to be non-detectable. The guidance also states that emission limits for these metals are unnecessary. (Department Guidance Memorandum DARM-PER/GEN-18.) Because the quantities of these pollutants are so low and ambient modeling has already been performed indicating that the emissions from Unit No. 8 would not exceed any of the Department's draft Ambient Reference Concentrations, Lakeland requests that Specific Condition 2 (and corresponding Condition 18) be deleted.

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**B. Mercury, Lead, and Beryllium Mass Emission Limits.** Lakeland also requests deletion of the mercury, lead, and beryllium mass emission limits established in Table 1. The Department's May 19, 1995 guidance referenced above regarding metal concentrations in low sulfur distillate fuel oil and natural gas states that concentrations of metals such as lead, mercury, and beryllium are so low as to be non-detectable, and states that emission limits for metals such as these are unnecessary. (Department Guidance Memorandum DARM-PER/GEN-18.) In addition, the Department's Best Available Control Technology determination for beryllium emissions from Unit No. 8 did not include a numeric emission limit; rather, it stated only that emissions were limited by natural gas and No. 2 fuel oil firing. Best Available Control Technology determinations were apparently not required for lead or mercury emissions. The Department's guidance clearly indicates that mass emission limitations for these metals are unnecessary and further indicates that, to the extent the guidance conflicts with an existing permit, the existing permit should be revised. The Department did not include the lead, mercury, or beryllium emission limits from Table 1 in the draft Title V permit issued on October 23, 1996, and Lakeland requests that the construction permit for Unit No. 8 be revised to be consistent with the Title V permit by deleting these unnecessary emission limits.

**C. Limitations on Fuel Oil Quantity.** Lakeland requests revision of the specific limitations on the total quantities of fuel oil that may be fired under Condition No. 6. These quantity limitations for fuel oil are based on the *average* heating value of distillate oil, and the actual fuel oil used in this unit would likely vary from the average, especially on a short-term basis. As the heat input into this unit is based on a curve of temperature versus heat input, it would be neither practical nor correct to use an average fuel oil quantity limitation. Furthermore, it is more limiting than necessary to subject this Unit to an annual maximum fuel oil limitation usage based on that average. As demonstrated in the attached curve, different quantities of fuel can be used while still meeting the heat input limits of the unit, based on the ambient temperature and varying heating values of the fuel. The use of the curves should more accurately reflect appropriate limitations on the quantities of fuel oil that may be used to ensure compliance with the maximum heat input limits for this unit. Lakeland therefore requests that the current limitations on the quantities of fuel oil that may be used in Condition No. 6 be replaced with the attached curves.

**D. PM Compliance Test Method.** Lakeland requests that Method 5B be included as an acceptable method for particulate matter compliance testing under Specific Condition 9.a. This test method is currently authorized in the operation permit for this unit, and has been included in the draft Title V permit as well. Lakeland requests that the construction permit be revised to specifically recognize the authority to use Method 5B, to be consistent with the current operation permit and draft Title V permit.

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**E. Sulfuric Acid Mist and Carbon Monoxide Emission Limitations.** While Table 1 of the permit states that the annual sulfuric acid mist and carbon monoxide emissions are limited, there are no corresponding short-term limits or annual compliance testing requirements. The draft Title V permit issued by the Department does not include these annual limits, and Lakeland requests that they be deleted from the construction permit as well. Best available control technology for this unit is the use of natural gas as the primary fuel with restricted use of low sulfur diesel oil as the alternative fuel, and good combustion practices. It is not necessary to establish emission limitations for these pollutants, and Lakeland therefore requests that the annual limitations identified in Table 1 for sulfuric acid mist and carbon monoxide be deleted.

**F. Averaging Periods for Particulate Matter Nitrogen Oxides, and Heat Input Rate.** The U.S. Environmental Protection Agency recently finalized what is called the "Any Credible Evidence" rule, which provides that data from test methods other than the compliance methods identified in permits can be used as evidence in enforcement actions. (62 Fed. Reg. 8314, Feb. 24, 1997). Lakeland understands that the federal rule is not yet effective and the Florida Department of Environmental Protection has not yet formally adopted the new rule, it may nevertheless be appropriate to make certain clarifications at this time since the permit is in the process of being revised. While the methods for demonstrating compliance have been identified in the permit, clarification regarding the averaging times applicable to certain emission limits would also be appropriate.

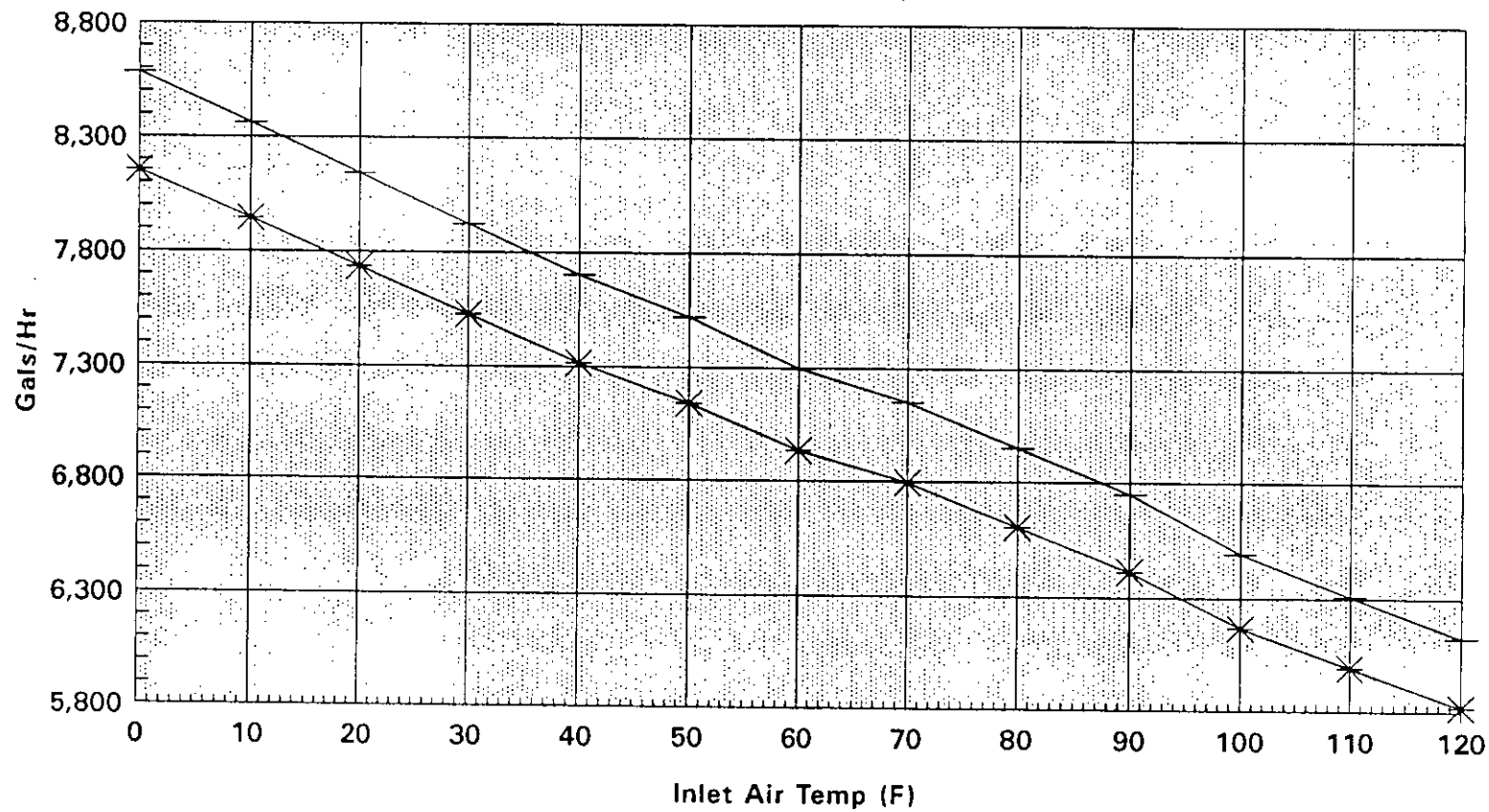
*Particulate Matter*--The particulate matter emission limits in Table 1 should be identified as being based on a three-hour average, since the compliance test methods (Method 5 and 17 stack tests) recognizes the average of three 1-hour runs.

*Nitrogen Oxides*--Based on Section 403.0872(13)(b) of the Florida Statutes, if a continuous emissions monitor required under the acid rain program (40 CFR Part 75) is used to demonstrate compliance with a nitrogen oxides (NOx) limit, compliance is to be based on a 24-hour rolling average. This unit is subject to the acid rain program requirements and has installed and certified a continuous emissions monitor for NOx emissions under 40 CFR Part 75. Lakeland hereby requests that Specific Condition 9.b. of the permit be revised to identify the CEM as the method of demonstrating compliance with the permit limits of 25 and 42 ppm for natural gas and fuel oil, respectively, in lieu of a Method 20 stack test. Lakeland further requests, based on Section 403.0872(13)(b), Florida Statutes, that the permit be revised to clarify that compliance with the NOx limits in Table 1 is to be based on a 24-hour rolling average.

*Heat Input*--Specific Condition 6 provides that the maximum heat input is not to exceed 1055 mmBtu/hour while firing gas and 1040 mmBtu/hour while firing No. 2 fuel oil. Lakeland requests that this condition be revised to clarify that the heat input rate is to be determined

# Unit 8

## Oil Input vs Compressor Inlet Temperature



+ Design Input #2 Oil \* 95% Design Input #2 Oil

Peak Mode

Using LHV of #2 Oil  
2/25/97

## Memorandum

# Florida Department of Environmental Protection

DARM-PER/GEN-18  
REVISED

TO: District Air Program Administrators  
County Air Program Administrators  
BAR Air Permitting Staff

FROM: Howard L. Rhodes, Director *HLR*  
Division of Air Resources Management

DATE: May 19, 1995

SUBJECT: Guidance on Testing Requirements in Permit Conditions for  
the Determination of Metal Concentrations in Fuels.

This guidance replaces "Guidance on Testing Requirements in Permit Conditions for the Determination of Metal Concentrations in Fuels" (DARM-PER/GEN-18) dated April 6, 1995.

Rule 62-297.340(1)(a), F.A.C., requires the owner or operator of a new or modified emissions unit that is subject to an emission limiting standard to conduct a compliance test that demonstrates compliance with the applicable emission limiting standards prior to obtaining an operating permit for such emissions unit.

Recent data from analyses of new distillate fuel oil indicate that metal concentrations are low and in many cases non-detectable by ASTM test methods. Distillate fuel oil is defined as any fuel oil that contains 0.05 or less percent nitrogen, by weight, and complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society of Testing and Materials in ASTM D396-78, Standard Specifications for Fuel Oils. Test data indicate that the metal concentrations in gaseous fuels are non-detectable. Also, the analyses indicate that testing requirements for metal concentrations in gaseous fuels or the above mentioned distillate oils are unnecessary, burdensome, and costly. The metals of concern are lead (Pb), inorganic arsenic compounds (As), cadmium (Cd), chromium (Cr), nickel (Ni), mercury (Hg), vanadium (V), and beryllium (Be).

If permit applications and Department review show that emissions units that exclusively use natural gas, propane, or distillate oil fuels do not trigger Prevention of Significant Deterioration (PSD) or Nonattainment Area (NAA) New Source Review (NSR) determinations, mass emissions limitations for metals should not be included in the permit. Even if the emission levels of one or more of the above mentioned metals trigger PSD or NAA NSR, the permitting authority need not establish mass emissions limitations for such metals. However, the permit (which includes BACT or LAER determinations) should note that the metals emissions levels for natural gas, propane, and distillate fuels (as defined above) are generally non-detectable by ASTM test methods. A BACT or LAER determination that requires the exclusive use of the above referenced fuels automatically minimizes the emissions of the heavy

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metals and should suffice without imposing specific mass emissions limitations for metals, which would require testing pursuant to Rule 62-297.340(1)(a), F.A.C.

Each permit for emissions units exclusively using natural gas, propane, or distillate oils, as defined above, shall include a requirement that the owner maintain records to reflect that all the fuels delivered for these emissions units meet the specifications necessary to classify them as distillate fuels, natural gas, or propane.

To the extent that this conflicts with an existing permit, the existing permit prevails until a new permit is issued. For such changes to be federally enforceable, it is necessary to change both the air construction permit and the air operation permit.

HLR/mc/c

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63-115/631

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WORLD CITRUS CENTER

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VOID AFTER 180 DAYS

TWO HUNDRED FIFTY DOLLARS NO CENTS

PAY TO THE ORDER OF

FLORIDA DEPT. OF ENVIRONMENTAL  
REGULATION

DATE

3-13-97

CHECK AMOUNT

\*\*\*\*\*250.00

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CITY MANAGER  
*[Signature]*  
ASST. CITY MANAGER  
*[Signature]*  
FINANCE DIRECTOR

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