Florida Power
CORPORATION

October 30, 1992

Mr. C. H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Re: Air Construction Permit No. AC 64-191015
Request for Permit Extension and Modification

Florida Power Corporation (FPC) received your letter of September 24, 1992 in response to FPC's letter requesting an extension to the above reference permit. Since the submittal of the original request for extension, certain events have occurred that necessitate both an extension of the permit as well as a modification to the allowable Nitrogen Oxides (NO_x) emission limitations.

During October, FPC has been performing compliance testing on the combustion turbines as required by the construction permit. During this testing, FPC determined that the percentage of fuel bound nitrogen (FBN) in the fuel being burned was greater than anticipated and was causing an increase in NO_x emissions above the permitted concentration. In the PSD application for this facility, the estimated NOx emissions and the proposed limit on NO_x (42 ppm) was based on a FBN of 0.015% or less. FPC is finding actual percentage of FBN in excess of 0.015%. Since water injection has no affect on NO_x resulting from FBN, as FBN

a. Contain nitrogen oxides in excess of that allowed by the following equation:

$$STD = 0.0042 + F$$

where:

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis)

F = NO_x emission allowance for fuel-bound nitrogen defined by the following table:

Fuel-bound nitrogen (% by wt.)	F (NO_x % by volume)
N ≤ 0.015	0
0.015 < N ≤ 0.04	0.04(N)
N > 0.04	0.0016

where: N = the nitrogen content of the fuel (% by wt.)

b. Contain carbon monoxide in excess of 25 ppmvd at baseload conditions.

c. Contain particulate matter in excess of 0.009 pound per million Btu heat input.

d. Contain beryllium in excess of 2.61 pound per 10^{12} Btu heat input.

e. Exhibit greater than 10 percent opacity.

7. The Permittee shall not discharge or cause the discharge into the atmosphere from any combustion turbine when burning natural gas in the turbine any gases which:

a. Contain nitrogen oxides in excess of 25 ppmvd at 15 percent oxygen.

b. Contain carbon monoxide in excess of 25 ppmvd at baseload conditions.

c. Contain particulate matter in excess of 0.004 pound per million Btu heat input.

d. Exhibit greater than 10 percent opacity.

PERMIT NUMBER

FACILITY I D NUMBER
1860-0005-011

SPECIAL CONDITIONS

The permittee is authorized to construct and operate subject to the following special conditions:

1. Best Available Control Technology for the emissions of nitrogen oxides from the operation of each of these turbines (Combustion Turbine #1 and Combustion Turbine #2) is set at 42 parts per million by volume, one-hour rolling average, corrected to 15% oxygen, when burning natural gas.

2. Best Available Control Technology for the emissions of nitrogen oxides from the operation of each of these turbines (Combustion Turbine #1 and Combustion Turbine #2) is set at 65 parts per million by volume, one-hour rolling average, corrected to 15% oxygen, when combusting No. 2 fuel oil.

   Recognizing that fuel-bound nitrogen can be a problem when combusting No. 2 fuel oil, an allowance for fuel-bound nitrogen is allowed. The allowance is taken from the following table, and added to the 65 ppm$_v$ limit.

Fuel-bound nitrogen (percent by weight)	Allowance (ppm$_v$)
$N \leq 0.015$	0
$0.015 < N \leq 0.05$	400(N)

3. The aggregate emissions from the operation of both turbines shall not exceed the de minimis emissions limits for any pollutant except nitrogen oxides. Performance testing shall be conducted by the applicant in order to verify that the de minimis emissions rates for particulate matter, carbon monoxide, and volatile organic compounds will not be exceeded under any operating conditions permitted by this permit. Performance testing shall be conducted in accordance with relevant test methods of 10 CSR 10-6.030 Sampling Methods for Air Pollution Sources, (5) for particulate emissions, (10) for carbon monoxide, and (18) Section 7.2 for volatile organic compounds.

   Particulate testing shall be conducted at maximum load, both fuels, three runs each. Testing for carbon monoxide and volatile organic compounds shall be conducted at four loads, both fuels (natural gas and No. 2 fuel oil), three runs each. Test method 18, section 7.2 is specified because it has a lower minimum detection level than DNR method 13A.

   Sulfur dioxide will be measured by fuel analysis rather than by Method 6 or 6C. There being no SO_2 reduction in the gas turbine, this method will provide acceptable accuracy.