



December 17, 1990

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DER-BAQM

Ms. Theresa Heron  
Florida Dept. of Environmental Regulation  
Twin Towers Office Bldg.  
2600 Blair Stone Road  
Tallahassee, FL 32399

RE: ENRON/FGTC Compressor Station No. 20 PSD Permit Application

Dear Ms. Heron:

As you requested, attached is the sheet of emission calculations for FGTC's Compressor Station No. 20. Please feel free to contact me at your convenience if you have further questions concerning this permit application.

Sincerely,

A handwritten signature in cursive script that reads "David A. Buff".

David A. Buff, P.E.  
Principal Engineer

TT/tla

cc: Alan Bowman, ENRON

Attachment

cc: J. Heron  
B. Andrews  
C. Halladay  
S. Brooks, SE  
G. Harper, EPA

90051A1/7

KBN ENGINEERING AND APPLIED SCIENCES, INC.

1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

EQUAL EMPLOYMENT OPPORTUNITY / AN AFFIRMATIVE ACTION EMPLOYER

EMISSION CALCULATIONS  
FGTC's COMPRESSOR STATION No. 20  
ST. LUCIE COUNTY, FLORIDA

Fuel usage and emission calculations are presented below for the proposed Dresser-Rand Model 412-KVSR reciprocating IC engine at Compressor Station No. 20.

Fuel Usage:

$$\begin{aligned}(2,400 \text{ bhp}) \times (7,300 \text{ Btu/bhp-hr}) &= 17.52 \times 10^6 \text{ Btu/hr} \\ (17.52 \times 10^6 \text{ Btu/hr}) / (1,030 \text{ Btu/scf}) &= 17,010 \text{ scf/hr}\end{aligned}$$

Emission Calculations:

$$\begin{aligned}\text{NO}_x: (2.0 \text{ g/bhp-hr})(2,400 \text{ bhp})(1 \text{ lb}/453.593 \text{ g}) &= 10.582 \text{ lb/hr} \\ (10.582 \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ ton}/2,000 \text{ lb}) &= 46.3 \text{ TPY}\end{aligned}$$

$$\begin{aligned}\text{CO: } (2.8 \text{ g/bhp-hr})(2,400 \text{ bhp})(1 \text{ lb}/453.593 \text{ g}) &= 14.815 \text{ lb/hr} \\ (14.815 \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ ton}/2,000 \text{ lb}) &= 64.9 \text{ TPY}\end{aligned}$$

VOCs(non-methane hydrocarbon):

$$\begin{aligned}(1.7 \text{ g/bhp-hr})(2,400 \text{ bhp})(1 \text{ lb}/453.593 \text{ g}) &= 8.995 \text{ lb/hr} \\ (8.995 \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ ton}/2,000 \text{ lb}) &= 39.4 \text{ TPY}\end{aligned}$$

$$\begin{aligned}\text{PM: } (5 \text{ lb}/10^6 \text{ scf})(17,010 \text{ scf/hr}) &= 0.085 \text{ lb/hr} \\ (0.085 \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ ton}/2,000 \text{ lb}) &= 0.37 \text{ TPY}\end{aligned}$$

$$\begin{aligned}\text{SO}_2: (10 \text{ gr}/100 \text{ scf})(17,010 \text{ scf/hr})(1 \text{ lb}/7,000 \text{ gr}) &= 0.243 \text{ lb/hr of Sulfur} \\ (2 \text{ lb SO}_2/\text{lb Sulfur})(0.243 \text{ lb/hr Sulfur}) &= 0.486 \text{ lb/hr of SO}_2 \\ (0.486 \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ ton}/2,000 \text{ lb}) &= 2.13 \text{ TPY}\end{aligned}$$



## Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

November 28, 1990

Ms. Jewell A. Harper, Chief  
Air Enforcement Branch  
U.S. EPA - Region IV  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Dear Ms. Harper:

Re: Completeness Review

The enclosed information is being forwarded to you for completeness review.

1. Seminole Fertilizer Corp., Polk County, gas turbine cogeneration project, PSD-FL-157.
2. The following applications from Florida Gas Transmission Company:

Compressor Sta. No. 12, Santa Rosa County, PSD-FL-156  
Compressor Sta. No. 13, Washington County, PSD-FL-158  
Compressor Sta. No. 14, Gadsden County, PSD-FL-159  
Compressor Sta. No. 15, Taylor County, PSD-FL-160  
Compressor Sta. No. 16, Bradford County, PSD-FL-161  
Compressor Sta. No. 17, Marion County, PSD-FL-162  
Compressor Sta. No. 18, Orange County, PSD-FL-163  
Compressor Sta. No. 20, St. Lucie County, PSD-FL-164

If there are any questions, please call Barry Andrews at (904)488-1344 or write to me at the above address. If it is convenient to FAX a response to us, the FAX number to use is (904)922-6979.

Sincerely,

*Patricia G. Adams*

*for*

C. H. Fancy, P.E.  
Chief

Bureau of Air Regulation

CHF/pa

