



8/27/96

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

NOTICE OF PERMIT AMENDMENT

In the Matter of an
Application for Permit by:

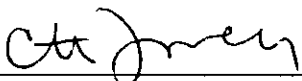
Mr. Allan Weatherford
Florida Gas Transmission Company
Post Office Box 945100
Maitland, Florida 32794-5100

DRAFT Permit Amendment Number:
AC 09-229441
AIRS ID 0170035-001 AC
Citrus County (Station No. 26)

Enclosed is the Permit Amendment for the above mentioned compressor station which will modify the permit specific conditions. This facility is located in Citrus County, Florida. This permit amendment will be issued pursuant to Chapter 403, Florida Statutes (F.S.).

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.



C. H. Fancy, P.E., Chief
Bureau of Air Regulation

Florida Gas Transmission
Station No. 26
Page Two

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT AMENDMENT (including FINAL permit amendment) was mailed by certified mail (*) and that copies were mailed by U.S. Mail before the close of business on 8-27-96 to the listed persons.

Allan Weatherford, FGT*
Bill Thomas, SWD

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52(11), Florida
Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Kuni Joken 8-27-96
Clerk Date

Enclosure

FINAL DETERMINATION

FLORIDA GAS TRANSMISSION COMPANY

Permit Amendment Numbers:

AIRS ID 0570438-002 AC	AC29-228821,	Hillsborough County
AIRS ID 0170035-001 AC	AC09-229441,	Citrus County
AIRS ID 1230034-002 AC	AC62-229319,	Taylor County

The draft amendments to Florida Gas Transmission Company's construction permits for the above compressor stations were distributed on July 9, 1996. These permit amendments will eliminate emissions limitations and will revise testing requirements which exceed those specified by rule for its units located at Compressor Station No. 30, Northeast of Plant City on SR 582 in Hillsborough County, and Compressor Station No. 26, Northwest of Lecanto in Citrus County.

These emission units burn clean natural gas and, during initial compliance testing, demonstrated compliance with all of the required emission standards. These amendments will delete emission standards and testing requirements for carbon monoxide, particulate matter and volatile organic compounds because they are not required by the the New Source Performance Standard (NSPS) for Gas Turbines or are not necessary for Prevention of Significant Deterioration (PSD) per Rule 62-212.400, F.A.C. Deleting the requirements will not result in increased emissions of any of these pollutants, but will simplify the applicable permits and reduce annual testing costs.

The visible emissions requirements for these units will be revised from 10 percent opacity to 20 percent in accordance with the Rule 62-296.320, F.A.C. A Best Available Control Technology determination was not required. The custom fuel monitoring schedule will be incorporated by reference as soon as EPA approves it.

The Notice of Intent to Issue was published in the Tampa Tribune on July 24, 1996. Copies of the permit amendment evaluations were available for inspection at the office of the Hillsborough County Environmental Protection Commission and the Department of Environmental Protection offices in Tampa and Tallahassee.

No written comments were submitted during the public notice period. However, Mr. Clay Roesler, FGT Environmental Specialist, noted that the DEP Tampa office should also be included as a permitting authority for operating permits issuance.

The Department considered Mr Roesler's comment and will also include the DEP Tampa office as one of the permitting authorities for operating permit issuance. This was inadvertently omitted in the draft letter sent with the public notice package.

The final action of the Department is to issue the permit amendments as noted for the Hillsborough and Citrus County stations. The DEP Tampa office will be included as the permitting authority for operating permits issuance for the Hillsborough station. The Taylor County station will be affected only by the custom fuel monitoring schedule. Therefore that amendment will not be issued until EPA approves the revision.



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

August 21, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Allan Weatherford
Division Environmental Specialist
Florida Gas Transmission Company
Post Office Box 945100
Maitland, Florida 32794-5100

Dear Mr. Weatherford:

RE: Request for Amendment to Air Construction Permit
AC09-229441 (Station No. 26) Citrus County
AIRS ID 0170035-001 AC

The Department is in receipt of your letters dated April 12 and May 10, 1996, requesting to amend the above permit to include the EPA custom fuel monitoring schedule and to modify specific conditions Nos. 1, 2 and 8.

The Department has reviewed this request and hereby amends the above mentioned permit as follows:

SPECIFIC CONDITION No. 1

This condition will be modified to exclude the emission limits standard for all pollutants except for NO_x and SO₂. The emissions expressed in units of mass (TPY) will remain as a condition of the permit. This facility has already demonstrated initial compliance with the permit limits.

FROM:

POLLUTANT	lbs/hr	tons/yr	Emission Factor
NOx *	3.95	17.3	1.49 g/bhp-hr
CO	5.88	25.75	2.22 g/bhp-hr
VOC(s) (non-methane)	0.25	1.10	0.95 g/bhp-hr
PM	0.077	0.34	5 lbs/MMscf
PM10	0.077	0.34	5 lbs/MMscf
S02	0.44	1.94	10 gr S/100scf

*NOx emission standard shall not exceed 42 ppmv at 15% oxygen on a dry basis.

TO:

Standard for Sulfur Dioxide [40 CFR 60.333(a)]

The owner or operator shall not cause to be discharge into the atmosphere from any gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis. Annual emissions shall not exceed 1.94 TPY.

Standard for Nitrogen Oxides

NOx emissions shall not exceed 42 ppmv at 15% oxygen on a dry basis. (Based on a 100% load conditions). Annual emissions shall not exceed 17.3 TPY.

SPECIFIC CONDITION No. 2

FROM:

Visible Emissions shall not exceed 10% opacity.

TO:

Visible emissions shall not exceed 20% opacity.

SPECIFIC CONDITION No. 8

FROM:

Compliance with the allowable emission limits shall be determined within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after initial start-up and annually thereafter except as provided in Specific Condition 10, below, by the following reference methods as described in 40 CFR 60, Appendix A (July 1992 version) and adopted by reference in Chapter 17-297, F.A.C.

Method 1	Sample and Velocity Traverses
Method 2	Volumetric Flow Rate
Method 3 or 3A	Gas Analysis
Method 9	Determination of the Opacity of the Emissions from Stationary Sources
Method 10	Determination of the Carbon Monoxide from Stationary Sources
Method 20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Gas Turbines
Method 18	Measurement of Gaseous Organic Compounds Emissions by Gas Chromatography
Method 25A	Determination of Total Gaseous Organic Concentrations Using a Flame Ionization Analyzer

TO:

Compliance with the allowable emission limits shall be determined by the following EPA reference methods as described in 40 CFR 60, Appendix A and adopted by reference in Chapter 62-297, F.A.C.

Method 1	Sample and Velocity Traverses
Method 2	Volumetric Flow Rate
Method 3 or 3A	Gas Analysis
Method 9	Determination of the Opacity of the Emissions from Stationary Sources
Method 20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Gas Turbines

Since this source already demonstrated initial compliance with permitted emission limits, subsequent testing frequency (in operating permits) shall be as determined by the Hillsborough County Environmental Protection Commission (EPCHC) office.

Mr. Allan Weatherford
Florida Gas Transmission
Station No. 30
Page 4

CUSTOM FUEL MONITORING SCHEDULE

The custom monitoring schedule, when approved by EPA, will be incorporated by reference. Currently, EPA is in the process of approving the FGT request.

This letter must be attached to the above mentioned permit and shall become a part of the permit.

Sincerely,



Howard L. Rhodes, Director
Division of Air Resources
Management

Attachment to be Incorporated

Mr. Allan Weatherford's letters of April 12 and May 10, 1996.



Florida Gas Transmission Company

P. O. Box 945100 Maitland, Florida 32794-5100 (407) 875-5800

RECEIVED

May 9, 1996

OVERNIGHT MAY 10 1996

BUREAU OF
AIR REGULATION

A. A. Linero, P.E.
Administrator
New Source Review Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Sir or Madam:

Enclosed please find our check in the amount of \$250.00 for processing fees for our amendment request for permits AC09-229441, AC62-229319, and AC29-228821.

If you have any questions or need additional information, please call me at (407)-875-5816.

Sincerely,

Allan Weatherford
Division Environmental Specialist



Florida Gas Transmission Company

P. O. Box 945100 Maitland, Florida 32794-5100 (407) 875-5800

April 12, 1996

CERTIFIED

RECEIVED

APR 16 1996

BUREAU OF
AIR REGULATION

Mr. Clair Fancy
Florida Department of Environmental Protection
Northwest District Branch Office
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Re: Florida Gas Transmission Company - Station 30
Air Permit No. AC29-228821

Florida Gas Transmission Company (FGT) requests that certain modifications be made to the above referenced construction permit and also requests approval for a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in the natural gas.

The permitted unit is a minor source at a minor facility. Changes are requested to eliminate requirements that exceed those specified by rule without significantly impacting reasonable compliance oversight.

Specifically, FGT requests the following changes to the referenced permit:

Change Specific Condition 1 so that all emissions limiting standards are omitted except for NO_x and SO₂ standards. The standards should be consistent with the standards that are applicable to the source in NSPS (40CFR61) and should be expressed in the units defined in the standard rather than in pounds per hour (lbs/hr) or tons per year (TPY).

Change Specific Condition 2 to read: "Visible emissions shall not exceed 20% opacity."

Revise Specific Condition 8 so that the test requirements are limited to:

-Annual Testing: for visible emissions by Method 9

-Initial and Prior to Renewal Testing: for No_x by Methods 1,2,3A, and 20

NOTE: The initial tests, as currently specified in the permit, were completed and showed compliance with all permit limits. FGT is requesting the change to affect only the "annual" and "prior to renewal" testing requirements.

Additionally, pursuant to Specific Condition 13, FGT requests approval of a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in its fuel gas (a copy of this request has also been sent to Hillsborough County EPC for their consideration). The permitted gas turbine burns only highly regulated pipeline quality natural gas that contains negligible amounts of nitrogen and sulfur. The initial compliance tests (attached) show the nitrogen and sulfur concentrations in the gas to be much less than the respective permit limits. The nitrogen and sulfur content of the fuel gas, supplied through FGT's pipeline, has historically been and will remain relatively constant at levels far below those of regulatory interest.

If you have any questions or would like to arrange a meeting to discuss these changes, please call me at (407) 875-5816.

Sincerely,

A handwritten signature in black ink, appearing to read "Allan Weatherford". The signature is fluid and cursive, with a long horizontal stroke at the end.

Allan Weatherford
Division Environmental Specialist

c Charlie Thompson
 Roy Smith
 Curt Gavin
 Ray Glass
 Eric Peterson, Hillsborough County EPC

Table 2
Summary of Results Unit No. 3003

Company: Florida Gas Transmission Co.
 Plant: Compressor Station No. 30
 Location: 4 miles NE of Plant City
 Hillsborough Co., FL on SR 582
 Source: Solar Saturn T-1001S-312F
 Technicians: CDC, LJB, DD

Test Number	30C-1	30C-2	30C-3	Averages	FDEP Permit Limits
Date	7/25/95	7/25/95	7/25/95		
Start Time	8:30	10:10	11:35		
Stop Time	9:44	11:10	12:35		
Turbine/Compressor Operation					
Power Turbine Speed (% NPT)	80.9	79.9	80.5	80.4	
Gas Producer Speed (% NGP)	96.8	95.9	96.0	96.2	
Horsepower (site bhp, via FGT cmprsr thruput calc.)	1057	1009.4	1010	1025	
PCD Observed (psig)	56.3	53.9	53.4	54.5	
Combustor Air Inlet Temperature (T-1, °F)	81.0	92.6	93.3	89.0	
Turbine Exhaust Stack Temperature (T-7, °F)	883	888	889	887	
Gas Compressor Suction Pressure (psig)	745.6	732.0	705.1	727.6	
Gas Compressor Suction Temperature (°F)	81.0	81.0	81.0	81.0	
Gas Compressor Discharge Pressure (psig)	917.6	898.6	867.3	894.5	
Gas Compressor Discharge Temperature (°F)	110.0	110.0	110.0	110.0	
Compressor Flow (MMSCFD)	596.1	603.0	613.0	604.0	
Turbine Fuel Data (Residue Gas)					
Fuel Heating Value (Btu/SCF, Gross)	1032	1032	1032	1032	
Fuel Specific Gravity	0.5838	0.5838	0.5838	0.5838	
O2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8676	8676	8676	8676	
CO2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1024	1024	1024	1024	
Total Sulfur in Fuel (grains Sulfur/100 SCF fuel)	0.088	0.088	0.088	0.088	10
Fuel Flow (MMSCFH)	0.0107	0.0107	0.0107	0.0107	0.0156
Heat Input (MMBtu/hr)	11.01	11.05	11.07	11.04	15.76
Brake-specific Fuel Consumption (Btu/bhp-hr)	10418	10945	10957	10773	
Ambient Conditions					
Atmospheric Pressure ("Hg)	29.89	29.92	29.93	29.91	
Temperature (°F): Dry bulb	80.5	88.5	90	86	
(°F): Wet bulb	79.3	79.5	82	80	
Humidity (lbs moisture/lb of air)	0.0208	0.0191	0.0207	0.0202	
Measured Emissions					
NOx (ppmv, dry basis)	30.3	30.7	29.9	30.3	
NOx (ppmv @ 15% O2)	44.1	44.9	43.7	44.3	
NOx (ppmv @ 15% O2, ISO Day)	54.6	52.6	52.5	53.2	150†
CO (ppmv, dry basis)	40.2	41.3	42.0	41.2	
O2 (% volume, dry basis)	16.85	16.87	16.86	16.86	
CO2 (% volume, dry basis)	2.28	2.37	2.24	2.30	
Visible Emissions (% opacity)	0	0	0	0	10
Fo (fuel factor, range = 1.600-1.834 for NG)	1.78	1.70	1.80	1.76	
Stack Volumetric Flow Rates					
via Pitot Tube Traverse (SCFH, dry basis)	5.19E+05	5.11E+05	5.01E+05	5.11E+05	
via O2 "F-factor" (SCFH, dry basis)	4.93E+05	4.97E+05	4.97E+05	4.96E+05	
via CO2 "F-factor" (SCFH, dry basis)	4.95E+05	4.77E+05	5.06E+05	4.93E+05	
Calculated Emission Rates (via pitot tube)					
NOx (lbs/hr)	1.88	1.88	1.79	1.85	3.95
CO (lbs/hr)	1.52	1.54	1.53	1.53	5.88
SO2 (lbs/hr, Based on fuel flow and fuel sulfur)	0.003	0.003	0.003	0.003	0.44
NOx (tons/yr)	8.2	8.2	7.8	8.1	17.30
CO (tons/yr)	6.7	6.7	6.7	6.7	25.75
SO2 (tons/yr, Based on fuel flow and fuel sulfur)	0.012	0.012	0.012	0.012	1.94
NOx (g/bhp-hr)	0.81	0.84	0.80	0.82	1.49
CO (g/bhp-hr)	0.65	0.69	0.69	0.68	2.22

† Sub part GG, NSPS NOx standard

Gas Fuel F Factor & Heating Value Calculation

Client **Florida Gas Transmission Company**
 Sample ID **pipeline natural gas (residue gas)**
 Time **6:23**
 Date **7/25/95**

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density (lb/ft ³)	% volume		Component Gross Btu/lb	Weight Fract. Btu	Gross Heating Value (Btu/SCF)	Volume Fract. Btu
				Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.3840	28.016	0.0744	0.00029	0.6397	0	0.00	0.0	0
CO ₂	0.8050	44.010	0.1170	0.00094	2.1090	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.8620	16.041	0.0424	0.04065	91.0145	23879	21733.35	1013.0	971.082
Ethane	2.3000	30.067	0.0803	0.00185	4.1356	22320	923.07	1792.0	41.216
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.3750	44.092	0.1196	0.00045	1.0043	21661	217.54	2590.0	9.7125
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.0900	58.118	0.1582	0.00014	0.3188	21308	67.93	3363.0	3.0267
n-butane	0.0720	58.118	0.1582	0.00011	0.2551	21257	54.22	3370.0	2.4264
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane	0.0320	72.144	0.1904	0.00006	0.1364	21091	28.77	4008.0	1.28256
n-pentane	0.0190	72.144	0.1904	0.00004	0.0810	21052	17.05	4016.0	0.76304
n-hexane	0.0600	86.169	0.2274	0.00014	0.3055	20940	63.98	4762.0	2.8572
H ₂ S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
total	100.00								
		Average Density		0.04466		100.0000		Gross Heating Value	
		Specific Gravity		0.58377				Btu/lb 23106	
								Btu/SCF 1032.4	

CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000				
Oxygen	32.000	0	0	0.00	0.0000				0
Nitrogen	28.016	0	0	0.38	10.7581			0.637383014	
CO ₂	44.010	0.272273	0	0.81	35.4281	0.57149832			1.52597
CO	28.010	0.42587	0	0.00	0.0000	0			0
Methane	16.041	0.75	0.25	95.86	1537.7223	68.32856815	22.7761894		
Ethane	30.067	0.8	0.2	2.30	69.1541	3.277713975	0.81942849		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.38	16.5345	0.801499135	0.17811114		
Propene	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.09	5.2306	0.256467027	0.0534478		
n-butane	58.118	0.82759	0.17247	0.07	4.1845	0.205173621	0.04275824		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.03	2.3086	0.113980444	0.02279664		
n-pentane	72.144	0.83333	0.16667	0.02	1.3707	0.067675889	0.0135355		
n-hexane	86.169	0.83721	0.16279	0.06	5.1701	0.256448311	0.04986469		
H ₂ S	34.076	0	0.058692	0.00	0.0000	0	0		
Totals				99.99900	1687.8617	73.87902487	23.96	0.637383014	1.52597

CALCULATED VALUES		
O ₂ F Factor (dry)	8676	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O ₂ F Factor (wet)	10657	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	1981	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	18.59	volume % water in flue gas @ 0% excess air
CO ₂ F Factor	1024	DSCF of CO ₂ /MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	11.80	volume % CO ₂ in flue gas @ 0% O ₂
Predicted Fo Factor	1.77	EPA Method 3a Fo value
Fuel VOC % (non-C1)	6.38%	non-methane fuel VOC content
Fuel VOC % (non-C1,C2)	2.17%	non-methane non-ethane fuel VOC content

Memorandum

**Florida Department of
Environmental Protection**

CH
TO: Clair Fancy / *Howard Rhodes*
THROUGH: A. A. Linero *A. A. Linero*
FROM: Teresa Heron
DATE: August 21, 1996
SUBJECT: Florida Gas Transmission - Amendments
Hillsborough County, Citrus County, and Taylor County

Attached are two letters amending the construction permits ^{2 of} for the above mentioned compressor stations. These units burn clean natural gas and, during initial compliance testing, demonstrated compliance with all of the required emission standards. These amendments will delete emission standards and testing requirements for carbon monoxide, particulate matter and volatile organic compounds because they are not required by the New Source Performance Standard (NSPS) for Gas Turbines or necessary for Prevention of Significant Deterioration (PSD) per Rule 62-212.400, F.A.C. Deleting the requirements will not result in increased emissions of any of these pollutants, but will simplify the applicable permits and reduce annual testing costs.

The visible emissions requirements for these units will be revised from 10 percent opacity to 20 percent in accordance with the Rule 62-296.320, F.A.C. The Custom fuel monitoring schedule request is being reviewed by EPA Region IV. It will be incorporated by reference as soon as EPA approves it.

A letter amendment will be prepared for the Taylor County station when EPA approves the request. This unit did not require the other changes made to the permits for the other stations.

I recommend your approval and signature.

TH/hh

Memorandum

Florida Department of
Environmental Protection

TH
TO: Clair Fancy / *Howard Rhodes*
THROUGH: A. A. Linero *A. A. Linero*
FROM: Teresa Heron
DATE: August 21, 1996
SUBJECT: Florida Gas Transmission - Amendments
Hillsborough County, Citrus County, and Taylor County

Attached are two letters amending the construction permits for ^{2 of} the above mentioned compressor stations. These units burn clean natural gas and, during initial compliance testing, demonstrated compliance with all of the required emission standards. These amendments will delete emission standards and testing requirements for carbon monoxide, particulate matter and volatile organic compounds because they are not required by the New Source Performance Standard (NSPS) for Gas Turbines or necessary for Prevention of Significant Deterioration (PSD) per Rule 62-212.400, F.A.C. Deleting the requirements will not result in increased emissions of any of these pollutants, but will simplify the applicable permits and reduce annual testing costs.

The visible emissions requirements for these units will be revised from 10 percent opacity to 20 percent in accordance with the Rule 62-296.320, F.A.C. The Custom fuel monitoring schedule request is being reviewed by EPA Region IV. It will be incorporated by reference as soon as EPA approves it.

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I recommend your approval and signature.

TH/hh