

Department of Environmental Protection

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

October 29, 1998

Virginia B. Wetherell Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Clayton A. Roesler Division Environmental Specialist Florida Gas Transmission Company Post Office Box 945100 Maitland, Florida 32794 5100

Dear Mr. Roesler:

RE: Approval of Custom Fuel Monitoring Schedule
Florida Gas Transmission Company (FGT)
AC62-229319 and 1230034-002-AC, (PSD-FL-202), Station 15, Taylor County
AC09-229441 and 0170035-001-AC, Station 26, Citrus County

AC29-228821 and 0570438-002-AC, Station 30, Hillsborough County

This is in response to your request dated April 12,1996, regarding approval of FGT's proposed Custom Fuel Monitoring Schedule pursuant to 40 CFR 60, Subpart GG for the above mentioned turbines and sites. Attached please find EPA's approval of this request. The approved Custom Fuel Monitoring Schedule shall be attached to the above mentioned permits and shall become a part of each permit.

If you have any questions regarding this matter, please call Teresa Heron at (850) 921-9529 or David McNeal at (404)562-9102.

Sincerely,

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

AAL/th/kt

Enclosure

cc: Jerry Campbell, EPCHC
Jerry Kissel, SWD
Chris Kirts, NED
Barry Andrews, ENSR

SENDER:

Complete items 1 and/or 2 for additional services.

Complete items 3, 4a, and 4b. I also wish to receive the following services (for an Print your name and address on the reverse of this form so that we'can return this extra fee): card to you.

Attach this form to the front of the mailpiece, or on the back if space does not 1. Addressee's Address permit.

**Write "Return Receipt Requested" on the mailpiece below the article number.

**The Return Receipt will show to whom the article was delivered and the date 2. Restricted Delivery Consult postmaster for fee. 5 4a. Article Number Z 333 3. Article Addressed to: Is your RETURN ADDRESS completed 4b. Service Type ☐ Registered MY CARA ☐ Insured ☐ Express Mail ☐ Return Receipt for Merchandise ☐ COD 7. Date of Delivery 5. Received By: (Print Name 8. Addressee's Address (Only if requested and fee is paid) 6. Signature: (Addressee of Agent)

Z 333 615 503

102595-97-B-0179

Domestic Return Receipt

US Postal Service

PS Form 3811, December 1994

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

•	Sent Dong D	eller
	Street & Number	. 0
	Post Office State, & ZIP Coo	t GA
	Postage	\$
	Certified Fee	
	Special Delivery Fee	
,	Restricted Delivery Fee	
	Return Receipt Showing to Whom & Date Delivered	
	Return Receipt Showing to Whom, Date, & Addressee's Address	,
)	TOTAL Postage & Fees	\$
	Postmark or Date F6	Τ
2		9-15-88

Form **3800**, April 1995



Department of Environmental Protection

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

Virginia B. Wetherell Secretary

September 11, 1998

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. Douglas Neeley, Chief Air and Radiation Technology Branch U. S. Environmental Protection Agency - Region 4 61 Forsyth Street Atlanta, Georgia 30303

Re: Florida Gas Transmission Company
Custom Fuel Monitoring Schedule - Compressor Stations

Dear Mr. Neeley:

We request action on our attached letter dated December 23, 1997 regarding a custom fuel monitoring schedule for Florida Gas Transmission Company (FGT). We need to update the Department's ARMS database and to close out that permitting action.

It is possible that this one "fell through the cracks" since in some cases the applicants requested these actions directly from EPA. Also, we might have mailed it to your old address. In any case, applicants are now processing them through the state. We in-turn send them to EPA with the appropriate documentation for your review and approval (or denial). Most recent ones have been handled promptly.

If you have any questions regarding this matter, please call me or Teresa Heron at (850) 488-1344 or Clayton Roesler of Florida Gas Transmission Company at (407)875-5865.

Sincerely,

A. A. Linero, P.E.

Administrator

New Source Review Section

AAL/th

Enclosures

cc: Clayton Roesler, FGT



Department of Environmental Protection

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

Virginia B. Wetherell Secretary

December 23, 1997

CERTIFIED MAIL - RETURN PECEIPT REQUESTED

Mr. R. Douglas Neeley, Chief Air and Radiation Technology Branch Air, Pesticides and Toxics Management Division 100 Alabama Street S.W. Atlanta, Georgia 30303-3104

Re: Florida Gas Transmission Company
Custom Fuel Monitoring Schedule - Compressor Stations

Dear Mr. Neely:

The Fiorida Department of Environmental Protection requests approval of custom fuel monitoring schedules for the above mentioned company. The proposed schedules and supporting data needed for approval of the request have been enclosed for your review. The requests are for combustion turbines located at FGT Compressor Stations 30, 26, and 15, located in Duval, Citrus, and Taylor Counties, respectively. These units are subject to 40 CFR 60 Subpart GG. Pursuant to 40 CFR 60.334(b) (2), the U.S. EPA Administrator has approval authority for the custom fuel monitoring schedule. Station 15 was also subjected to PSD review.

The Department recommends approval of FGT's request and notes that FGT is the main gas supplier in Florida. Other requesters for custom fuel monitoring schedules typically rely on FGT's data in complying with their own monitoring requirements. We are advising all applicants to submit their requests through the Department.

It is the Department understanding that this request was previously sent to EPA by Florida Gas Transmission (FGT) sometime in June or July 1996. However, we have no record of any actions taken on the request, which is why it is being re-submitted.

If you have any questions regarding this matter, please call me or Teresa Heron of this Department at (850) 488-1344 or Clayton Roesler of FGT at (407)875-5865.

Sincerely,

A. A. Linero, P.E.

Administrate:

New Source Review Section

AAL/th/t

Enclosures

cc: Clayton Roesler, FGT

Florida Gas Transmission Company

P. O. Bax 945100 Maitland, Florida 32794-5100

(407) 875-5800 NORTHEAST DISTRIC

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DEP-JACKSONVILLE

April 12, 1996

Ms. Rita Felton
Florida Department of Environmental Protection
Northeast District
7825 Baymeadows Way, Suite B-200
Jacksonville, FL 32256-7577

Dear Ms. Felton:

Re:

Florida Gas Transmission Company - Station 15

Turbine Compressor 1507, Air Permit No. AC62-229319

Florida Gas Transmission Company (FGT) requests approval for a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in the natural gas fuel for each of the referenced turbine units.

Pursuant to Specific Condition 13, FGT requests approval of a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in its fuel gas. 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,

Allan Weatherford

Division Environmental Specialist

c Glenn Sellars
Roy Smith
Norman Tedder

TABLE 2 Summary of Results Unit No. 1507

NORTHEAST DISTRICT

PROFINE 7:995

Florida Gas Transmission Company Compressor Station No. 15 6 miles N of Perry on C-361 in Taylor County, FL Solar Mars Model 90S

Technicians: CDC, LIB, DLD

Tectnicians: CDC, LIB, DLD	·		3111111	ש ט נוכול	1 <u>1</u> 2
Test Number	15C-4		15C-6	CKSONVIL	E
Date	8/29/95	8/29/95	8/29/95		
Start Time	8:50	9:13	10:37		FDEP
Stop Time	9:00	10:21	11:50		Permit
Turbine/Compressor Operation	(7888) W 24 (1888)			Averages	Limits
Power Turbine Speed (NPT, %)	94.6	94.2	93.3	94.0	
Gas Producer Speed (NGP, %)	100.9	100.8	. 100.5	100.7	
Estimated Horsepower (Solar Compressor Shaft, bhp)	11301	11326	11254	11294	11261*
Engine Compressor Discharge Pressure (PCD, psig)	180.6	179.4	176.3	178.8	
Combustor Air Inlet Temperature (T-1, °F)	84.0	85.9	88.5	86.1	
Power Turbine Exhaust Temperature (T-5, °F)	1290	1290	1291	1290	
Gas Compressor Suction Pressure (psig)	765.3	768.9	779.5	771.2	
Gas Compressor Suction Temperature (°F)	72.9	72.3	72.0	72.4	
Gas Compressor Discharge Pressure (psig)	1059.0	1065.8	1071.4	1065.4	
Gas Compressor Discharge Temperature (°F)	128.1	128.3	127.7	128.0	
Compressor Flow (MMSCFD)	580.3	574.0	572.2	575.5	
Turbine Fuel Data (Residue Gas)	1				15000-25000-2500
Fuel Heating Value (Bttl/SCF, HHV)	1034	1034	1034	1034	
Fuel Specific Gravity	0.5840	0.5840	0.5840	0.5840	
O2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	8674	8674	8674	8674	
CO2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1024	1024	1024	1024	i
Total Sulfur in Fuel (grains Sulfur/100 SCF fuel)	0.059	0.059	0.059	0.059	10
Fuel Flow (MMSCFH)	0.0921	0.0915	0.0920	0.0919	0.1265
Heat Input (MMBtu/hr)	95.29	94.67	95.16	95.04	131.59
Ambient Conditions	7J.27	74.07	33.10	73.04	Total of the control
Atmospheric Presuure ("Hg)	29.82	29.84	29.86	29.84	40.0000,0000,000,000
Temperature (°F): Dry bulb	79	80	82	80	
(°F): Wet bulb	74	76	72	74	
Humidity (lbs moisture/lb of air)	0.0166	0.0180	0.0138	0.0161	
Measured Emissions	1.0100	0.0180	0.0136	0.0101	Lucitotterostilitariou.
NOx (ppmv, dry basis)	23.9	24.0	23.4	23.8	(31,000,000,000,000,000,000,000,000,000,0
NOx (ppmv @ 15% O2)	27.5	27.7	27.2		42.0
NOx (ppmv @ 15% O2, ISO Day)		32.0	28.8	27.5	
CO (ppmv, dry basis)	31.2	i		30.7	81.2†
	0.9	1.1	1.3	1.1	·
O2 (% volume, dry basis)	15.78	15.79	15.82	15.80	
CO2 (% volume, dry basis)	2.92	2.97	2.96	2.95	10
Visible Emissions (% opacity)	0	0	0	0	10
Fo (fuel factor, range = 1.600-1.834 for NG)	1.75	1.72	1.72	1.73	
Stack Volumetric Flow Rates	165	i			200 2000 5 2000
via Pitot Tube Traverse (SCFH, dry basis)	4.17E+06	4.02E+06	3.80E+06	4.00E+06	
via O2 "F-factor" (SCFH, dry basis)	3.37E+06	3.36E+06	3.40E+06	3.38E+06	
via CO2 "F-factor" (SCFH, dry basis)	3.34E+06	3.26E+06	3.29E+06	3.30E+06	
Calculated Emission Rates (via pitot tube)		l			
NOx (lbs/hr)	11.9	11.5	10.6	11.3	16.14
CO (lbs/hr)	0.27	0.32	0.36	0.32	11.71
SO2 (lbs/hr, Based on fuel flow and fuel sulfur)	0.016	0.015	0.016	0.015	3.61
NOx (tons/yr)	52.2	50.5	46.5	49.7	70.70
CO (tons/yr)	1.2	1.4	1.6	1.4	51.30
SO2 (tons/yr, Based on fuel flow and fuel sulfur)	0.068	0.068	0.068	0.068	15.83
NOx (g/bhp-hr)	0.48	0.46	0.43	0.46	0:58
CO (g/bhp-hr)	0.011	0.013	0.014	0.013	0.42

^{100%} of permitted output at ambient temperature of 80°F

[†] EPA NSPS Performance Standard

Gas Fuel F Factor & Heating Value Calculation

Client

Florida Gas Transmission Company

Sample ID

pipeline natural gas (residue gas), St. 15

Time

16:02

Date 8/28/95

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

				% volume		Component		Gross	Volume
	%	Molecular	Density	x		Gross	Weight	Heating Value	Fract.
Component	Volume	Wt.	(IP\LT3)	Density	weight %	Btu/lb	Fract. Btu	(Btw/SCF)	Btu
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	0.3630	28.016	0.0744	0.00027	0.6045	0	0.00	0.0	, 0
CO2	0.7530	44.010	0.1170	88000.0	1.9719	0	0.00	0.0	0
CO ·		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.8760	16.041	0.0424	0.04065	90.9870	23879	21726.77	1013.0	971.224
Ethane	2.3070	30.067	0.0803	0.00185	4.1464	22320	925.47	1792.0	41.3414
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.3970	44.092	0.1196	0.00047	1.0627	21661	230.20	2590.0	10.2823
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.0970	58.118	0.1582	0.00015	0.3435	21308	73.19	3363.0	3.26211
n-butane	0.0800	58.118	0.1582	0.00013	0.2833	21257	60.21	3370.0	2.696
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane	0.0340	72.144	0.1904	0.00006	0.1449	21091	30.56	4008.0	1.36272
n-pentane	0.0210	72.144	0.1904	0.00004	0.0895	21052	18.84	4016.0	0.84336
n-hexane	0.0720	86.169	0.2274	0.00016	0.3665	20940	76.74	4762.0	3.42864
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
total	100.00	Average	Density	0.04468	100.0000	Gross Hea	ting Value	Gross Heatin	g Value
		Specific	Gravity	0.58403	,	Btu/lb	23142	BtwSCF	1034.4

CALCULATION OF F FACTORS

					Percents			
Component	Mol. Wt.	C Factor H Fac	tor % volum	e Fract. Wt.	Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0 1	0.00	0.0000		0		· · · · · · · · · · · · · · · · · · ·
Oxygen	32.000	. 0 . 0	0.∞	0.0000	· · .		,	- 0
Nitrogen .	28.016	$(1,2,0,\dots,2,2,0)$	0.36	10.1698			0.602268295	
CO2	44.010	0.272273 0	0.75	33.1395	0.534352898			1.42678
CO.	28.010°	0.42587 0	0.00	0.0000	0			0
Methane	16.041	0.75 0.2	5 95.88	1537.9469	68.3093034	22.7697678		
Ethane	30.067	0.8 0.2	2.31	69.3646	3.286282746	0.82157069		
Ethylene	28.051	0.85714 0.142	0.00	0.0000	0	0		
Propane	44.092	0.81818 0.181	818 0.40	17.5045	0.848157315	0.18847963		
Propene	42.077	0.85714 0.142	86 0.00	0.0000	0	0	·· .	
Isobutane	58.118	0.82759 0.172	47 0.10	5.6374	0.276296178	0.0575802		
n-butane	58.118	0.82759 0.172	47 0.08	4.6494	0.227873136	0.04748883		
Isobutene	56.102	0.85714 0.142	86 . 0.00	0.0000	0 .	0 .	and the second	
Isopentane.	72.144	0.83333 0.166	67 0.03	2.4529	0.121052399	0.02421106		
n-pentane	72.144	0.83333 0.166	667 0.02	1.5150	0.074767658	0.01495389		
n-hexane	86.169	0.83721 0.162	79 0.07	6.2042	0.307606285	0.05981203		
H2S	34.076	0 0.0586	923 0.00	0.0000	0	0 ,		

Totals

	100.00000	1688.2843	73.98569201	23.98	0.602268295	1.42678
	CA.	LCULATED	VALUES			
O2 F Factor (dry)	8674	DSCF of Ex	naust/MM Bru o	f Fuel Burn	ed @ 0% excess a	ir
O2 F Factor (wet)	10654	SCF of Exha	ust/MM Btu of I	Fuel Burned	@ 0% excess air	
Moisture F Factor	1980	SCF of Wate	T/MM Bru of Fu	el Burned (@ 0% excess air	
Combust. Moisture	18.59	volume % w	ater in flue gas (@ 0% exces	s air	
CO2 F Factor	1024	DSCF of CO	2/MM Bru of Fi	iel Burned (@ 0% excess air	
Carbon Dioxide	11.81	volume % C	O2 in flue gas @	0% 02		
Predicted Fo Factor	1.77	EPA Method	32 Fo value			
Fuel VOC % (non-C1)	6.57%	non-methane	fuel VOC conte	ent		
Fuel VOC % (non-C1,C2)	2.36%	non-methane	non-ethane fue	l VOC ∞nt	ent	



Florida Gas Transmission Company

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

RECEIVED

APR 1 6 1996

BUREAU OF AIR REGULATION

April 12, 1996

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:

Air Permit No. AC09-229441

Florida Gas Transmission Company - Station 26

Citrus County, Lecanto, Florida

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 NOx 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
- -Prior to Renewal Testing: for Nox 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,

Allan Weatherford

Division Environmental Specialist

c Charlie Thompson
Roy Smith
Mark Winder
John Ludlow

Eric Peterson, Hillsborough County EPC

Gas Fuel F Factor & Heating Value Calculation

Client

Florida Gas Transmission Company

Sample ID

pipeline natural gas (residue gas) 6:23

Time Date

3/21/95

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

CABOUR				% volume		Component		Gross	Volume
	%	Molecular	Density	x		Gross	Weight	Heating Value	Fract.
Component	Volume	WL	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu	(Btu/SCF)	Btu
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	0.4930	28.016	0.0744	0.00037	0.8078	0	0.00	0.0	0
CO2	1.0030	44.010	0.1170	0.00117	2.5844	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	. 0
Methane	95.1330	16.041	0.0424	0.04034 "	88.8320	23879	21212.20	1013.0	963.697
Ethane	2.2510	30.067	0.0803	0.00181	3.9807	22320	888.50	1792.0	40.3379
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propens	0.5020	44.092	0.1196	- 0.00060	1.3222	21661	286.41	2590.0	13.0018
propylena	A CONTRACTOR OF THE PARTY OF TH	42.077	0.1110	0.00000	0.00007	21041	0.00	2336.0	0
Isoburne	0.1490	58.118	0.1582	0.00024	0.5191	21308	110.61	3363.0	5.01087
n-butme	0.1490	58.118	0.1582	0.00024	0.5191	21257	110.35	3370.0	5.0213
Isobotene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopeniane	0.1000	72.144	0.1904	0.00019	0.4193	21091	88.44	4008.0	4.00S
n-pentane	0.1000	72.144	0.1904	0.00019	0.4193	21052	88.27	4016.0	4.016
a-beame	0.1190	86.169	0.2274	0.00027	0.5960	20940	124.79	4762.0	5.66678
HIS	Serie Mesion	34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
							•		•
total	100.00	Average	Density	0.04541	100.0000 [Gross Hea	ting Value	Gross Heatin	yalue
		- Specific		0.59356		Btu/lb	22910	Btu/SCF	1040.8
The same of the sa									

	•	•					Weight I	Percents	
Component	Mol. Wt.	C Factor	H Factor	% volume	Fract WL	Carbon	Hydrogen	Nitrogen	Öxygen
Hydrogen	2016	0	1	0.00	0.0000		0		
Oxygen	32.000	0	. 0	0.00	0.0000				0
Nitrogen	28.016	0	0	0.49	13.8119		•	0.804982658	
CO2	44.010	0.272273	0	1.00	44.1420	0.70047131			1.87034
CO .	28.010	0.42587	0	0.00	0.0000	0		•	0
Methane	16.041	0.75	0.25	95.13	1526.0285	66.7048437	22.2349479		
Ethane	30.067	0.8	0.2	2.25	67.6808	3.15565165	0.78891291		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	.0	0		
Propane	44.092	0.81818	0.181818	0.50	22.1342	1.0554699	0.23454915		
Ртореле	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.15	8.6596	0.41768188	0.08704503		
n-outane	58.118	0:82759	0.17247	0.15	8.6596	0.41768188	0.08704 <i>5</i> 03		
Isobutene	56.102	0.85714	0.14286	. 0.∞	0.0000	0	0	•	•
Isopentane	72.144	0.83333	0.16667	0.10	7.2144	0.3503892	0.07007952		
n-pentane	72.144	0.83333	0.16667	0.10	7.2144	0.3503892	0.07007952		18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
n-hexane	86.169	0.83721	0.16279	0.12	10,2541	0.50034078	0.09728799		
H2S	34.076	0	0.058692	0.00	0.0000	0	0		

1 OTST2	99.99900	1715.7994	73.6529195	23.67	0.804982658	1.87034

CALCULATED VALUES										
O2 F Factor (dry)	8688	DSCF of Exhaust/MM Bru of Fuel Burned @ 0% excess air								
O2 F Factor (wet)	10662	SCF of Exhaust/MM Bits of Fuel Burned @ 0% excess air								
Moisture F Factor	1974	SCF of Water/MM Btu of Fuel Burned @ 0% excess air								
Combust. Moisture	18.52	volume % water in flue gas @ 0% excess air								
CO2 F Factor	1030	DSCF of CO2/MM Bru of Fuel Burned @ 0% excess air								
Carbon Dioxide	11.85	volume % CO2 in flue gas @ 0% O2								
Predicted Fo Factor	1.76	EPA Method 3a Fo value								
Fuel VOC % (non-C1)	8.06%	non-methane fuel VOC content								
Fuel VOC % (non-C1,C2)	3.98%	non-methane non-ethane fuel VOC content								

TABLE 2: Summary of Results Unit No. 2601

Company: Florida Gas Transmission Company Plant: Compressor Station #26 Location: 2 miles NW of Lecanto in Citrus County Technicians: CDC, LJB, LAB Source: Solar Taurus Model 60S Solonox Turbine

Test Number	26C-1	≈26C-1=#	26C-2	∞26€-3∞1		
Date	3/21/95	3/21/95	3/21/95	3/21/95		
Start Time		9:01	11:22	13:00	ı	FDEP
	9:01	10:10	12:22	14:04		Permit
Stop Time	10:10	10.10	12.22	14.04	<u> </u>	Limits
Turbine/Compressor:Operation	90.6	90.6	86.7	85.5	Averages:::87.3	*** THUILE
Power Turbine Speed (%,NPT)	89.6	89.6		96.5		
Gas Producer Speed (%,NGP)	96.9	96.9	96.5	6243	96.6	6500
Estimated Horsepower (bhp ISO Day, Solar program)	6439	6439	6149	131.1	6277 132.3	0300
PCD Observed (psig)	134.7	134.7	131.0	78.3	76.3	
T-1 Temperature (°F)	72.7	72.7	78.0	1400	1400	
T-5 Temperature (°F)	1400	1400	1401	466.7	462.1	
Compressor Flow (MMSCFD)	446.7	446.7	473.0	871.1		
Gas Compressor Suction Pressure (psi)	808.5	808.5	833.7	63.3	837.8 63.5	1
Gas Compressor Suction Temperature (°F)	63.9	63.9	63.3			
Gas Compressor Discharge Pressure (psi)	1027.7	1027.7	1038.5	1039.9	1035.4	
Gas Compressor Discharge Temperature (°F)	99.6	99.6	96.0	95.7	97.1	100110000000000000000000000000000000000
Fuel Data (Residue Gas)		3043	1041	1041	70.47	
Fuel Heating Value (Btu/SCF-HHV)	1041	1041	1041	1041	1041	
O2 "F-factor", based on fuel analysis	8688	8688	8688	8688	8688	
CO2 "F-factor", based on fuel analysis	1030	1030	1030	1030	1030	10
Total Sulfur in Fuel (grains/100 SCF)	0.063	0.063	0.063	0.063	0.063	10
Fuel Flow (MMSCF/hr)	0.0510	0.0510	0.0498	0.0497	0.0501	0.0684
Heat Input (MMBtu/hr)	53.05	53.05	51.78	51.70	52.18	71.52
Ambient Conditions						
Temperature (°F, wet)	66	66	69	69	68	
(°F, dry)	74	. 74	80 .	80	78	
Atmospheric Pressure ("Hg, abs.)	29.89	29.89	29.87	29.84	29.87	
Humidity (lbs/lb of air)	0.0112	0.0112	0.0124	0.0124	0.0120	
Measured Emissions	1		l e			
NOx (ppmv, dry)	24.1	22.0	22.5	23.5	23.0	
NOx (ppm @ 15% O2)	28.0	25.6	26.4	.27.6	26.9	42.0
NOx (ppm @15% O2, ISO Day)	29.4	26.8	27.9	29.2	28.4	154.2†
CO (ppmv, dry)	6.7	6.7	5.6	4.8	5.7	
O2 (% volume, dry)	15.82	15.82	15.88	15.88	15.86	
CO2 (% volume, dry)	3.00	3.00	2.85	2.97	2.94	
Fo	1.69	1.69	1.76	1.69	1.71	
THC (ppmv, dry as Methane via M-25A)	0.95	0.95	0.30	0.13	0.46	
Visible Emissions (% Opacity)	0	0	0	0	0	10
Stack Volumetric Plow Rates	-			-		
via Pitot Tube Traverse (SCFH, dry)	2.04E+06	2.04E+06	2.02E+06	1.98E+06	2.01E+06	
via O2 "F-factor" (SCFH, dry)	1.90E+06		1.87E+06		1.88E+06	
via CO2 "F-factor" (SCFH, dry)					1.83E+06	
Mass Emissions (via EPA Methods 1-4)	1.022700	1.022.700	1.072,400	1.772.700	1.002 +00	
NOx (lbs/hr)	5 0 2	5 2 5	5 44	5	5 5 2	8.92
CO (lbs/hr)	5.86	5.35	5.44	5.55	5.53	I . I
	0.99	0.99	0.82	0.69	0.84	6.46
THC (lbs/hr)	0.081	0.081	0.025	0.011	0.039	0.37 ¥
ISO2 (lbs/nr, based on fuel flow and fuel sulfur)	0.0092	0.0092	0.0090	0.0089	0.0090	1.97
NOx (tons/yr)	25.7	23.4	23.8	24.3	.24.2	39.1
CO (tons/yr)	4.34	4.34	3.61	3.02	3.66	28.29
THC (tons/yr)	0.35	0.35	0.11	0.05	0.17	1.62 Y
SO2 (tons/yr. based on fuel flow and fuel sulfur)	0.040	0.040	0.039	0.039	0.040	8.62
NOx (g/bhp-hr)	0.413	0.377	0.401	0.403	0.400	0.62
CO (g/bhp-hr)	0.070	0.070	0.061	0.050	0.060	0.45
THC (g/bhp-hr)	0.0057	0.0057	0.0019	0.0008	0.0028	0.26 ¥
- Reports NOv recalibration value per EDA 40 CED 60			O Section 6			

Reports NOx recalibration value per EPA 40 CFR 60, Appendix A, Method 20, Section 6.2.3.

[†] EPA 40 CFR 60 Subpart GG NSPS requirement

[¥] FDEP Permit limits are for non-methane Volatile Organic Compounds (VOC).

פעניהאה היות בת בתכני פרוריו על אפור מואים מחום HACE I CHILLIERS HACE 1; } SEG-30-1992 10:39 FEO: DECES.ESD.C78/158 878 MC

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UNITED STATES ENVIRONMENTAL PROTECTION ACENCY שאבוו החדמתוות משעלם

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م عاجلان علاميم مسمد

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Authority for Approval of Custom Fuel Monitoring Schoolules Under MSFS Suppart Co ಉಪತಾಣ:

FROM: John E. Resnic, Chief

Compliance Monitoring Franca

Air Compliance Brunch Chiefs Regionx II, III, EV, V, VI and IX TOI

Air Programs Branch Chiefs Ragions I-X

The MSPS for Stationary Gas Turbines (Subpart GG) at 40 GFR 60.114(b)(2) allows for the development of outton fuel monitoring conedulat as an alternative to delly monitoring of the sulfur and. nitrogen content of fiel first in the turbines. Regional Offices have been forwarding custor fuel monitoring schodules to the since it was understood that sucherity for approval of these concedures with the Initiation Standards and Ingineering Division, it has been determined that the Reminal Offices do have the suthering to approve Substant to custom fuel horizontary and address to it is no longer necessary to forward those requests to meadquarters for approval.

Over the part few years, SSCO has issued ever twenty custon achecular for recurer whine pipeline custing natural cas. In order to maintain national constantency, we recommend that any conclude Regional Offices issue for natural gas be no loss stringent than the Collowing: Eultur controring should

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2007/007

Enclosure

Conditions for Custom Fuel Eumpling Schedule for Stationary Gas Turbinas

- 1. Honitoring of fuel nitroyen content shall not be required while natural gas is the only fuel fired in the gas turbing.
- Sulfur Monitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be. conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved citernative meshod. The reference meshods are: ASTX 01072-60; ASTX 03031-81; ASTX 03246-81; and ASTX 04084-82 as referenced (n 40 CFR 50.335(b)(2).
 - b. Effective the date of this custom schedule, sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content. and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
 - c. If after the monitoring required in item 2(b) above, or herein. the sulfur content of the fuel shows. Hetle variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide omission limits specified under 40 CFR 60.333, sample analisis shall be conducted thice per annum. This mentioning shall be consucted during the first and third quarters of each calencar year.
 - d. Should any suitur analysis as resulted in (tems 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, the owner or operator shall notify the Sate air Control Tourd . I of such excess emissions and the custom schedule chill be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted weekly ouring the interim period when this custom schedule is being re-axamined.
 - 3. If there is a change in fuel supply, the owner or operator must. notify the State of such change for re-examination of this custom schedule. A substantial change in fuci quality shall be considered 2: 4 change in fuel supply. Sulfur monitoring shelf be conducted weekly during the interim period when this custom schedule is being re-examined.
 - 4. Records of sample analysis and fuel supply peralment to this custom schodula chall be received for a period of three years, and be svailable. for inspection by personnel of (coersi, state, and local air poliution control agencies.

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be blacetly, tollowed by quarterly, then centennual, given at loast cix months of data demonstrating little variability in oulder convent and compliance with (60.31) at each monitoring traquency; nitrogen monitoring can be welved for pipoline quality natural gas, since there is no fuel-bound nitrogen and since the fine nitrogen and since the fine appreciably to NO₂ emissions. Ploans as the latestod sample custom senaculo for dotable. Given the increasing trend in the use of pipeline quality natural gas, we are investigating the possibility or amending suppert OG to Allow for loss iroquent sultur monitoring and a valver of nitrogen monitoring requirements where natural gas is used.

Where courses using all request auctom fuel tentitaring achedules, Regional Offices are encouraged to contact \$500 for consultation on the appropriate fuel mentioning conscute. However, Regions are not required to send the request librals to GGCD for approval.

If you have any questions, please contact Sally K. Farsall at FIG DEX-ZETS.

Attachment

co: John Cronebak Coorga Haleh Robert Ajex Earl Salo

Florida Gas Transmission Company

RECEIVED

P. O. Box 945100 Maitland, Florida 32794-5100

(407) 875-5800

April 12, 1996

CERTIFIED

APR 1 6 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 NOx 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 Nox 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,

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: Location: Compressor Station No. 30 4 miles NE of Plant City

Hillsborough Co., FL on SR 582

Source:

Solar Saturn T-1001S-312F

Technicians:

CDC, LJB, DD

Technicians: CDC, LJB, DD		- 2 2 - 2 1	777.47.75.47.7.1		
Test Number	30C-1	30C-2	30C-3		
Date	7/25/95	7/25/95	7/25/95		
Start Time .	8:30	10:10	11:35		FDEP
Stop Time	9:44	11:10	12:35		Permit
Turbine/Compressor Operation	3 3			Averages	Limits
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 empress thruput cale.)	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	31.0	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 (MNiBtu/hr)	11.01	11.05	11.07	11.04	15.76
Brake-specific Fuel Consumption (Btu/bhp-hr)	10418	10945	10957	10773	
Ambient Conditions	10410	102,13	10/3/	20	
Atmospheric Presuure ("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	0.0208	0.0191	0.0207	1 0.0202	
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)		52.6	52.5	53.2	150†
	54.6			41.2	1301
CO (ppmv, dry basis)	40.2	41.3	42.0		<i>*</i> .
O2 (% volume, dry basis)	16.85	16.87	16.86	16.86	
CO2 (% volume, dry basis)	2.28	2.37	2.24	2.30	1 10
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

Florida Gas Transmission Company 50 llient

pipeline natural gas (residue gas) 6:23 ample ID

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)ate 7/25/95
TAI CULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

	%	Molecular	Density	% volume X		Component Gross	Weight	Gross Heating Value	Yolume Fract.
Component	Volume	Wt.	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu	(BtwSCF)	Btu
Tydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Drygen		32.000	0.0846	0.00000	0.0000	. 0	0.00	0.0	O
ditrogen	0.3840	28.016	0.0744	0.00029	0.6397	O	0.00	0.0	O
102	0.8050	44.010	0.1170	0.00094	2.1090	O	0.00	0.0	Ö
20		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	O
dethane	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	0.0000	0.0000	21644	0.00	1614.0	O
ropane	0.37 <i>5</i> 0	44.092	0.1196	0.0XX45	1.0043	21661	217.54	2590.0	9.7125
ropviene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	O
sobutane	0.0900	<i>5</i> 8.118	0.1582	0.00014	0.3188	21308	67.93	3363.0	3.0267
-butane	0.0720	<i>5</i> 8.118	0.1582	0.00011	0.2551	21257	54.22	3370.0	2.4264
sobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	O
sopentane	0.0320	72.144	0.1904	0.00006	0.1364	21091	28.77	4008.0	1.28256
:-pentane	0.0190	72,144	0.1904	0.00004	0.0810	21052	17.05	4016.0	0.76304
-hexane	0.0600	86.169	0.2274	0.00014	0.3055	20940	63.98	4762.0	2.8572
- <u>1</u> 2S	0.0000	34.076	0.0911	0.00014	0.000	7100	0.00	647.0	0
ਾ ਹਾਂਣੀ	100.00	Average	Density	0.04466	100.0000	Gross Heat	nng Value	Gross Heating	Value
· · ·	100.00	Specific		0.58377	100.0000	Btw/lb	23106	Btw/SCF	1032.4

CALCULATION OF F FACTORS

								Percents	
Component	Mol. Wi.	C Factor	H Factor	% volume	Fract Wt	Carbon	Hydrogen	Nitrogen	Oxygen
dydrogen	2.016	O	1	0.00	0.0000		0		
Oxygen .	32.000	O.	۰. ن	0.00	0.000				- 0
vitrogen	28.016	O	O	0.38	10.7 <i>5</i> 81			0.637383014	
002	44.010	0.272273	O	0.81	3 <i>5</i> .4281	0.57149832			1.52597
20	28.010	0.42587	O	0.00	0.0000	O			O
√iethane	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	O	0 .	,	
>ropane	44.092	0.81818	0.181818	0.38	16. <i>5</i> 345	0.801499135	0.17811114		.*
TOpene .	42.077	0.85714	0.14286	0.00	0.0000	0 .	O	•	•
sobutane	<i>5</i> 8.118	0.82759	0.17247	0.09	5.2306	0.256467027	0.0534478		
:-butane	58.118	0.82759	0.17247	0.07	4.1845	0.205173621	0.04275824		
sobutene	56.102	0.8 <i>5</i> 714	0.14286	0.00	0.0000	O	O		
sopentane	72.144	0.83333	0.16667	0.03	2.3086	0.113980444	0.02279664		
i-pentane	72.144	0.83333	0.16667	0.02	1.3707	0.067675889	0.013 <i>5</i> 3 <i>5</i> 5		
-nexane	85.169	0.83721	0.16279	0.06	<i>5</i> .1701	0.256448311	0.04986469		
-12S	34.076	O	0.058692	0.00	0.0000	0 -	Ö		
	·								

Cotals 23.96 .0.637383014 1.52597 1687.8617 73.87902487

	CA	ALCULATED VALUES
O2 F Factor (dry)	8676	DSCF of ExhausuMM Bru of Fuel Burned & 0% excess air
O2 F Factor (wet)	10657	SCF of Exhaust/MM Bru of Fuel Burned @ 0% excess air
Moisture F Factor	1981	SCF of Water/MM Bru of Fuel Burned @ 0% excess air
Combust. Moisture	18.59	volume % water in flue gas @ 0% excess air
CO2 F Factor	1024	DSCF of CO2/MM Bru of Fuel Burned @ 0% excess air
Carbon Dioxide	11.80	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	1.77	EPA Method 3a Fo value
Fuel VOC % (non-C1)	6.38%	non-methane fuel VOC content
Fuel YOC % (non-C1,C2)	2.17%	non-methane non-ethane fuel VOC content

יני בי הפתי מונאונות בי הפתי בי פונים אינים בייני עד הייני ווגעשי מועיון מועין אינים בייני עד היינים ביינים מועין אינים ביינים ב

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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אויסאגפסאפצי

SUBJECT: Authority for Approval of Custom Fuel Monitoring

Schodular Under HSFS Suppert Co

FROM: John S. Reenic, Chief Forde Drawing

compliance Honitoring Stanon

TO(... Air Compliance Brunch Chiefs Regions II, III, EV, V, VI and IX

Air Progress Brench Chiefe Ragions I-X

The MSPS for Stationary Gas Turbines (Subpart CC) at 40 CFR 60.314(b)(2) allows for the development of curtor fuel mentioring ochecules as an electromize to daily monitoring of the subjust and nimegen content of fuel fixed in the turbinar. Regional Offices have been forwarding custom fuel monitoring schodulex to the 6tationery Source Compliance Division (SSCD) for consideration since it was understood that authority for approval of these concedules was not delagated to the Regions. Moyover, in consultation with the Emission Standards and Engineering Division, it has been determined that the Regional Offices do have the sufferior to approve Subpart to custom fuel monitoring schedules. Therefore it is no longer necessary to forward these requests to facedure for approval.

Over the part few years, S600 has issued over twenth custom consolute for source using pipeline quality natural gas. In order to maintain national consistency, we recommend that any cohodulos Regional Citics issue for natural gas be no less stringent than the following: subjur contoring should

ministration may not be that the many continua-SEP-ZB-1992 (2004) PART ORGES, (ISD. CONVISUANT NO TO

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P. 62

05-07-92 | 1:45AM FROM ESA FRS/35CD

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Enclosure

Conditions for Custom Fuel Sampling Schedule for Stationary Gas Turbines

- 1. Honitoring of fuel mitroyen content shall not be required while natural gas is the only fuel fired in the gas turbing.
- Sulfur Honitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTH reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTM 01072-80: . ASTH 03031-81: ASTH 03246-81; and ASTH 04084-82 as referenced in 40 CFR 50.335(b)(2).
 - b. Effective the date of this custom schedule, sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, I and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
 - c. If after the monitoring required in item 2(b) above, or herein. the sulfur content of the fuel shows. little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide omission limits specified under 40 CFR 60.333, sample analysis shall be conducted trice per annua. This monitoring shall be conducted during the first and third quarters of each calendar year.
 - d. Should any sultur analysis as required in items 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, the owner or operator shall notify the State Air Control Tourd 1 of such excess enissions and the custom schedule chall be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted vectly during the interim period when this custom schedule is being re-aximined.
 - If there is a change in fuel supply, the owner or operator must. notify the state of such change for re-examination of this custom schedule. A substantial change in (uci quality shall be considered as a change in feel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-essmined.
 - 4. Records of sample analysis and fuel supply persinent to this custom schodula chill be recilined for a period of three years, and be availablefor inspection by personnel of federal, scate, and local air pollution control agencies.

୍ର ଅନ୍ତର୍ଗ ଓଡ଼ିଆ ଓଡ଼ିଆ ଓଡ଼ିଆ ଅନ୍ତର୍ଗ ଓଡ଼ିଆ ଓଡ଼ିଆ ଓଡ଼ିଆ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଗ ଓଡ଼ିଆ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ମ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ମ ଅନ୍ତର୍ଗ ଅନ୍ତର୍ମ ଅନ୍ତର ଅନ୍ତର ଅନ୍ତର ଅନ୍ତର ଅନ୍ତର୍ମ ଅନ୍ତର ଅନ୍ତର

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05 07-92 11:45AM - FROM ERY ELENESCO

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be blacetary, tollowed by quarterly, then contained, given at least cix menths of data demonstrating little veriability in oulfur content and compliance with \$60.000 at each mentioning fraquency; mitrogen mentioning can be valved for pipeline quality natural gas, since there is no fuel-bound mitrogen and since the fraction of nitrogen and since the fractions approximately to NO_X emissions. Please see the attached sample custom conclude for cotalls. Given the increasing trend in the use of pipeline quality natural gas, we are investigating the possibility of amending Subpart Od to Allow for loss inequant subjur mentioning and a valver of nitrogen monitoring requirements where natural gas is used.

Where courses using oil request ductom fuel monitoring consciles, Regional Offices are encouraged to contact SSCD for consultation on the appropriate fuel monitoring conscule. However, Regions are not required to send the request itself to GBCD for approval.

If you have any questions, please contact Sally M. Farsell at FIS 187-2875.

אבשבשבחנ

co: John Cronebaw Coorge Haleh Robert Ajax Earl Salo Clayton A. Roesler

Florida Gas Transmission



To:	Jim Pennington	Froms	Clayton A. Roesler
Fax:	850-922-6979	Pages:	1 + Cover
Phones	850-921-9515	Date:	August 18, 1998
Re:	Request for Emergency Order	CC:	

• Comments: Print copy is in the mail.

Thanks.

Ac, 8/18/98 FYI & FILE.



Florida Gas Transmission Company

P. O. Bax 945100 Maitland, Florida 32794-5100 (407) 875-5800 August 18, 1998 Stehon is file

Mr. Jim Pennington Bureau of Air Regulation Florida Department of Environmental Protection 2600 Blairstone Road Tallahassee, Florida 32399-2400

Dear Mr. Pennington:

Re: Request for Emergency Order

Ambient Uprating at Florida Compressor Stations

Florida Gas Transmission Company (FGT) requests an Emergency Order allowing FGT to Ambient Uprate various compressor units at FGT compressors stations in Florida. Ambient Uprating capability is requested on the following units:

Unit 1206 at Compressor Station 12 in Munson, Florida Unit 1306 at Compressor Station 13 in Caryville, Florida Unit 1406 at Compressor Station 14 in Quincy, Florida Unit 1606 at Compressor Station 16 in Brooker, Florida Unit 1705 at Compressor Station 17 in Silver Springs, Florida Unit 1805 at Compressor Station 18 in Orlando, Florida Units 1901 and 1902 at Compressor Station 19 in Melbourne, Florida Unit 2005 at Compressor Station 20 in Ft. Pierce, Florida

The request for ambient uprating capability on these engines is due to an explosion caused by lightning at FGT Compressor Station 15 in Perry, Florida. The explosion disabled the pipeline and compressor station, temporarily stopping gas flow to Central and Southern Florida. This request for the Emergency Order for ambient uprating is to compensate for gas compression loss at FGT Compressor Station 15 in Perry, Florida. We are working diligently to restore FGT's Perry Compressor Station.

We appreciate your assistance with this temporary emergency order. If you have any questions or need any additional information, please contact me at 407-875-5846.

Sincerely,

Clayton A. Roeslev was Clayton A. Roesler

Division Environmental Specialist

Norman Tedder CC: Glenn Sellars Mike Teal Allan Weatherford

An ENRON/SCHAT Affiliate

BEFORE THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re:

EMERGENCY AUTHORIZATION FOR OPERATION, REPAIRS, REPLACEMENT, RESTORATION, AND CERTAIN OTHER MEASURES MADE NECESSARY BY THE AUGUST 14, 1998, EXPLOSION AT FLORIDA GAS TRANSMISSION COMPANY'S PERRY, TAYLOR COUNTY STATION NO. 15

OGC CASE NO. 98-2320

EMERGENCY FINAL ORDER

Under Section 120.569(2)(1) of the Florida Statutes, the State of Florida Department of Environmental Protection (the Department) enters the following Emergency Final Order, including findings of fact and conclusions of law, in response to the destruction wrought by the August 14, 1998, explosion (the explosion) at Florida Gas Transmission Company's Perry, Taylor County, Station 15.

FINDINGS OF FACT

1. Florida Gas Transmission Company is an interstate natural-gas system. Its approximately 4,900 miles of pipeline move gas from South Texas across the Gulf Coast into Florida, terminating in Miami. The system's customers include industries, commercial establishments, electric utilities, and municipalities throughout Florida.

- 2. On August 14, 1998, an explosion reportedly caused by a lightning strike occurred at the Florida Gas Transmission Company's Perry, Taylor County, Station 15. The explosion curtailed natural gas supply to multiple counties south of Perry, Florida. Some commercial establishments, such as restaurants, are unable to operate. Industries, such as Buckeye Florida, and electric utilities, such as Florida Power Corporation and Florida Power and Light Company, are required to use higher-polluting fuels. As a result, unless natural gas supply is immediately restored, emissions of nitrogen oxides, particulate matter, and sulfur dioxides are expected to increase significantly.
- 3. Florida Gas Transmission Company's Station 15 will require thirty days to complete necessary repairs. Natural gas supply to Central and Southern Florida can be restored immediately only by implementing an ambient upgrade at Station 12, Unit 1206, Santa Rosa County; Station 13, Unit 1306, Washington County; Station 14, Unit 1406, Gadsden County; Station 16, Unit 1606, Bradford County; Station 17, Unit 1705, Marion County; Station 18, Unit 1805, Orange County; Station 19, Units 1901 and 1902, Brevard County; and Station 20, Unit 2005, St. Lucie County.
- 4. The Department finds that the explosion has created a state of emergency threatening the public health, safety and welfare throughout those areas of Florida

affected by the curtailment of natural gas supply because the use of fuels other than natural gas will cause an increase in the emissions of air pollutants known to be associated with human health problems.

5. The Department finds that an emergency final order is required to address the need for quick action to avoid the unnecessary burning of fuels causing increased emissions.

CONCLUSIONS OF LAW

- 1. Section 120.569(2)(1) of the Florida Statutes gives the Department the authority to issue an emergency final order if as agency head, I find that an immediate danger to the public health, safety or welfare so requires and the order recites with particularity the facts underlying that conclusion.
- 2. Based on the findings recited above, I find and conclude that the emergency caused by the explosion requires an immediate order of the Department to protect the public health, safety and welfare.

THEREFORE, IT IS ORDERED:

1. Florida Gas Transmission Company may increase the horsepower and unit speed of its Phase II Clean Burn Units by implementing an ambient upgrade at Station 12, Unit 1206, Santa Rosa County; Station 13, Unit 1306, Washington County; Station 14, Unit 1406, Gadsden County; Station 16, Unit 1606, Bradford

County; Station 17, Unit 1705, Marion County; Station 18, Unit 1805, Orange County; Station 19, Units 1901 and 1902, Brevard County; and Station 20, Unit 2005, St. Lucie County. This Order does not allow Florida Gas Transmission Company to exceed its permitted air emission limits for the aforementioned units or at any of its other units. Emissions of nitrogen oxides, particulate matter, and sulfur dioxide must remain within the permitted limits for these units.

- 2. Florida Gas Transmission Company is authorized to repair Station 15 at Perry, Taylor County, Florida, to the same capacity and configuration as was permitted by the Department prior to the explosion.
- 3. The Department issues this Emergency Final Order solely to address the emergency created by the explosion. This order shall not be construed to authorize any activity within the jurisdiction of the Department except in accordance with the express terms of this order. This order will allow the company to continue to provide clean natural gas to its customers and thereby avoid the use of more polluting fuels.
- 4. Nothing in this order shall eliminate the necessity for obtaining any other federal, state, or local permits or other authorizations that may be required.

5. This Emergency Final Order shall take effect immediately and expire in thirty days from the date of execution set forth below, unless modified or extended by further order.

NOTICE OF RIGHTS

Any party adversely affected by this Emergency Final Order is entitled to judicial review under Section 120.68 of the Florida Statutes. The Florida Rules of Appellate Procedure govern the review proceedings. Such proceedings are commenced by filing one copy of a notice of appeal with the Agency Clerk of the Department of Environmental Protection and a second copy, accompanied by filing fees prescribed by law, with the First District Court of Appeal or with the district court of appeal in the appellate district in which the party resides. The notice of appeal must be filed within thirty days of rendition of the order to be reviewed.

DONE AND ORDERED on this \(\lambda \frac{\lambda \tau}{\lambda} \) day of August 1998 in Tallahassee, Leon County, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Virginia B.

Secretary

3900 Commonwealth Boulevard Tallahassee, Florida 32399-3000 Telephone: 850/488-1554

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to δ 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

6

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this EMERGENCY FINAL ORDER was sent by facsimile to Florida Gas Transmission Company at (850) 584-4816 and (407) 875-5896 on August 18, 1998, and sent by U.S. Mail or interoffice mail before the close of business on August 1998, to the persons listed:

*Clayton A. Roesler Florida Gas Transmission Company Post Office Box 945100 Maitland, FL 32794-5100

* Marie Driscoll Orange County EPD 2002 E. Michigan Street Orlando, FL 32806

Clair H. Fancy, Bureau of Air Regulation, DEP Ed Middleswart, NW District, DEP Chris Kirts, NE District, DEP Len Kozlov, Central District, DEP Isidore Goldman, SE District, DEP

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

LINDA K. REEL

Assistant General Counsel Florida Bar No. 30716

3900 Commonwealth Blvd., MS 35 Tallahassee, FL 32399-3000 Telephone: (850) 488-9314 P. O. Box 945100 Maitland, Florida 32794-5100 (407) 875-5800

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 31, 1998

RECEIVED

APR 03 1998

BUREAU OF AIR REGULATION

Mr. Clair Fancy Florida Department of Environmental Protection Bureau of Air Quality 2600 Blair Stone road Tallahassee, Florida 32399-2400

Reference:

Facility ID No.: 1230034

FGT Compressor Station No. 15, Taylor County

Turbine Unit 1507

Dear Mr. Fancy

Subject: Additional Replacement of Turbine 1507

Florida Gas Transmission Company (FGT) must again replace the Solar Turbines, Inc., (Solar) Mars turbine (Emission Unit 1507) at Compressor Station No. 15 due to mechanical problems with the new unit.

The original Solar T-12000 turbine was replaced recently with a new Solar Model T-13000 that was de-rated to match the rating and emissions of the original T-12000 turbine. The new de-rated T-13000 unit, however, had NO_x emissions that were reduced to 25 ppmv from the 42 ppmv of the original T-12000 unit. This was required by Specific Condition No. 1 of the original PSD Permit (PSD-FL-202). The de-rated T-13000 was installed and tested according to the requirements of 40 CFR 60 Subpart GG.

This de-rated T-13000 unit must be replaced due to mechanical problems with the turbine's bearings. Solar intends to replace the currently installed de-rated T-13000 with an identical unit. This new replacement unit will have the same rating and emissions guarantees as the first replacement, including a NO_x emission rate of 25 ppmv.

This situation was discussed recently with Mr. Alan Linero and Ms. Theresa Heron of your office, and both were of the opinion that there was no need to submit a new permit application in order to substitute the new de-rated T-13000 for the first de-rated T-13000. He also indicated that new emissions testing would be required to meet the requirement of 40 CFR 60 Subpart GG.

Facility ID No.: 1230034

FGT Compressor Station No. 15, Taylor County

March 31, 1998

This letter is being submitted to notify the Florida Department of Environmental Protection of FGT's intent to replace this unit and to confirm that no new application is required. FGT will perform emissions testing of the new unit within 60 days of installation as required by 40 CFR 60 subpart GG.

Any questions or need for additional information should be directed to Clay Roesler at (407) 875-5865. Thank you for your attention to this matter.

Sincerely,

Clayton A. Roesler

Division Environmental Specialist

Clayton A. Roesleryuns

cc: Mr. Christopher L. Kirts, P.E., District Air Program Administrator, Northeast District, Florida Department of Environmental Protection, 7825 Bay Meadows Way, Suite B200, Jacksonville, Florida 32256-7590

Dr. V. Duane Pierce, Air Quality Management Consulting Services

Team Environmentalist, FGT Perry Compressor Station No. 15, Taylor County

CC: J. Heron, BAR



Department of Environmental Protection

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

Virginia B. Wetherell Secretary

October 15, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Clayton Roesler Division Environmental Specialist Florida Gas Transmission Company P.O. Box 945100 Maitland, Florida 32794-5100

Re: Florida Gas Transmission Gas Turbines Permits

EPA Approval of Custom Fuel Monitoring Schedule

Station 30: 0570438-002-AC Station 26: 0170035-001-AC Station 15: 1230034-002-AC

Dear Mr. Roesler:

This letter is a reminder for you to send the Bureau of Air Regulation, the EPA Custom Fuel Monitoring Schedule approval for the above referenced gas turbines at the above mentioned FGT stations. If this request for approval has not been granted by EPA, please let us know.

As Teresa Heron has mentioned to you in previous telephone conversations, we need that information in order to update our ARMS database.

If you have any questions regarding this matter, please call Teresa Heron at (904) 488-1344.

Sincerely,

A. A. Linero, P.E.

Administrator

New Source Review Section

AAL/th/t

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Department of Environmental Protection

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

Virginia B. Wetherell Secretary

May 5, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Clayton Roesler Division Environmental Specialist Florida Gas Transmission Company P.O. Box 945100 Maitland, Florida 32794-5100

Re: Florida Gas Transmission Permit Modifications 1230034-004-AC, (PSD-FL-202), Station 15, Taylor County 0990333-003-AC, Station 21, Palm Beach County 0170035-003-AC, Station 26, Citrus County 0570438-004-AC, Station 30, Hillsborough County

Dear Mr. Roesler:

This letter is to confirm your April 9, 1997 telephone conversation with Ms. Teresa Heron, concerning your letter dated April 2, 1997. Your letter essentially requested treatment of turbine replacements as routine replacements not requiring construction permits or modifications. Based on your observations, the turbines have been lasting only approximately 5000 hours or so making their replacement routine rather than life extension projects or modifications subject to construction permitting.

It was our understanding that only the new (Phase III) turbines were unreliable to the extent that routine (possibly annual) replacement is foreseen. However it is not clear that the replacement is just for the gas turbines permitted during Phase III that are defective. Your request implies all existing gas turbines in the Florida Gas Transmission system. Be advised that a replacement of an old unit (pre- NSPS) for a new unit will have to be accomplished by the permitting process. New units will be subject to 40 CFR 60, Subpart GG.

Based on our review of your request the following information is needed:

Provide reasonable assurance (e.g. a letter from the manufacturer of the turbine) that will indicate the limited life of the turbines and the need of routine repair, maintenance, or replacement for the affected turbines. Identify those FGT units that would be affected.

Submit a table identifying for both the existing and the replacement unit: the manufacturer, model number, serial number, capacity (bhp) and the allowable emissions levels.

Pursuant to Rule 62-4.050 F.A.C., please submit the above requested information under a professional engineer seal. This is required to provide reasonable assurance that the units to be replaced are rated at the same capacity (brake horsepower) or less than the existing units and that the emissions levels will not exceed those of the already permitted turbine for that site or otherwise contravene a Department rule or permit condition.

Please direct a copy of your response to each of the individuals listed below. If you have any questions regarding this matter, please call Teresa Heron at (904) 488-1344.

Sincerely,

A. A. Linero, P.E. Administrator New Source Review Section

AAL/th/t

cc: Jerry Campbell, EPCHC Jerry Kissel, SWD Jeff Koerner, PBCPHU Bob Leetch, NED

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Department of Environmental Protection

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

Virginia B. Wetherell Secretary

December 23, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. Douglas Neeley, Chief Air and Radiation Technology Branch Air, Pesticides and Toxics Management Division 100 Alabama Street S.W. Atlanta, Georgia 30303-3104

Re: Florida Gas Transmission Company
Custom Fuel Monitoring Schedule - Compressor Stations

Dear Mr. Neely:

The Florida Department of Environmental Protection requests approval of custom fuel monitoring schedules for the above mentioned company. The proposed schedules and supporting data needed for approval of the request have been enclosed for your review. The requests are for combustion turbines located at FGT Compressor Stations 30, 26, and 15, located in Duval, Citrus, and Taylor Counties, respectively. These units are subject to 40 CFR 60 Subpart GG. Pursuant to 40 CFR 60.334(b) (2), the U.S. EPA Administrator has approval authority for the custom fuel monitoring schedule. Station 15 was also subjected to PSD review.

The Department recommends approval of FGT's request and notes that FGT is the main gas supplier in Florida. Other requesters for custom fuel monitoring schedules typically rely on FGT's data in complying with their own monitoring requirements. We are advising all applicants to submit their requests through the Department.

It is the Department understanding that this request was previously sent to EPA by Florida Gas Transmission (FGT) sometime in June or July 1996. However, we have no record of any actions taken on the request, which is why it is being re-submitted.

If you have any questions regarding this matter, please call me or Teresa Heron of this Department at (850) 488-1344 or Clayton Roesler of FGT at (407)875-5865.

Sincerely,

A. A. Linero, P.E.

Administrator

New Source Review Section

AAL/th/t

Enclosures

cc: Clayton Roesler, FGT

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Florida Gas Transmission Company

P. O. Box 945100 Maitland, Florida 32794-5100

RTHEAST DISTRICT

April 12, 1996

Ms. Rita Felton Florida Department of Environmental Protection Northeast District 7825 Baymeadows Way, Suite B-200 Jacksonville, FL 32256-7577

Dear Ms. Felton:

Re:

Florida Gas Transmission Company - Station 15

Turbine Compressor 1507, Air Permit No. AC62-229319

Florida Gas Transmission Company (FGT) requests approval for a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in the natural gas fuel for each of the referenced turbine units.

Pursuant to Specific Condition 13, FGT requests approval of a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in its fuel gas. 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,

Allan Weatherford

Division Environmental Specialist

Glenn Sellars С Roy Smith

Norman Tedder

TABLE 2. Summary of Results Unit No. 1507

NORTHEAST DISTRICT

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APR - 7 1996

Solar Mars Model 90S
Technicians: CDC, LJB, DLD

Compressor Station No. 15

Florida Gas Transmission Company

6 miles N of Perry on C-361 in Taylor County, FL

Test Number
Start Time
Stop Time
Turbine/Compressor Operation
Power Turbine Speed (NPT, %)
Cas Producer Speed (NGP, %) 100.9 100.8 100.5 100.7 1100.7 11301 11326 11254 11294 11261*
Estimated Horsepower (Solar Compressor Shaft, bhp) Engine Compressor Discharge Pressure (PCD, psig) Engine Compressor Suction Pressure (PCD, psig) Eng
Engine Compressor Discharge Pressure (PCD, psig) Combustor Air Inlet Temperature (T-1, °F) Power Turbine Exhaust Temperature (T-5, °F) Gas Compressor Suction Pressure (psig) Gas Compressor Suction Temperature (°F) Gas Compressor Discharge Pressure (psig) For Inlet
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Gas Compressor Discharge Pressure (psig) 1059.0 1065.8 1071.4 1065.4 128.1 128.3 127.7 128.0 128.1 128.1 128.3 128.0 128.1 128.3 128.0 128.1 128.3 128.0 128.1 128.3 128.1 128.0 128.1 128.3 128.1 128.0
Cas Compressor Discharge Temperature (°F) 128.1 128.3 127.7 128.0 127.7 128.0 128.1 128.3 128.1 128.3 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1 128.1
Compressor Flow (MMSCFD) 580.3 574.0 572.2 575.5 Turbine Fuel Data (Residue Gas)
Turbine Fuel Data (Residue Gas) Fuel Heating Value (Btu/SCF, HHV) Fuel Specific Gravity O. 5840 O. 059 O. 0919 O.
Fuel Heating Value (Btu/SCF, HHV) Fuel Specific Gravity O2 "F-factor" (DSCFex/MMBtu @ 0% excess air) CO2 "F-factor" (DSCFex/MMBtu @ 0% excess air) Total Sulfur in Fuel (grains Sulfur/100 SCF fuel) Fuel Flow (MMSCFH) Heat Input (MMBtu/hr) Ambient Conditions Atmospheric Presuure ("Hg) Temperature (°F): Dry bulb (°F): Wet bulb Measured Emissions NOx (ppmv @ 15% O2) NOx (ppmv @ 15% O2, ISO Day) CO2 (% volume, dry basis) CO2 (% volume, dry basis) CO2 (% volume, dry basis) 1034 1034 1034 1034 1034 1034 1034 103
Specific Gravity
Section Co2 "F-factor" (DSCFex/MMBtu @ 0% excess air) 1024
CO2 "F-factor" (DSCFex/MMBtu @ 0% excess air) 1024 1024 1024 1024 Total Sulfur in Fuel (grains Sulfur/100 SCF fuel) 0.059 0.059 0.059 0.059 0.0920 0.0919 0.1265 Fuel Flow (MMSCFH) 0.0921 0.0915 0.0920 0.0919 0.1265 Heat Input (MMBtu/hr) 95.29 94.67 95.16 95.04 131.59 Ambient Conditions 3<
Total Sulfur in Fuel (grains Sulfur/100 SCF fuel) 0.059 0.059 0.059 0.059 0.0920 0.0919 0.1265 Fuel Flow (MMSCFH) 0.0921 0.0915 0.0920 0.0919 0.1265 Heat Input (MMBtu/hr) 95.29 94.67 95.16 95.04 131.59 Ambient Conditions 3 4 3 4 3 4 3 4 4 4 7 7 4 4 4 7 4 4 4 4 7 4 4 4 4 7 4
Fuel Flow (MMSCFH) 0.0921 0.0915 0.0920 0.0919 0.1265 Heat Input (MMBtu/hr) 95.29 94.67 95.16 95.04 131.59 Ambient Conditions 1 29.82 29.84 29.86 29.84 Atmospheric Presuure ("Hg) 79 80 82 80 Temperature (°F): Wet bulb 74 76 72 74 Humidity (lbs moisture/lb of air) 0.0166 0.0180 0.0138 0.0161 Measured Emissions 23.9 24.0 23.4 23.8 NOx (ppmv, dry basis) 23.9 24.0 23.4 23.8 NOx (ppmv@ 15% O2) 27.5 27.7 27.2 27.5 42.0 NOx (ppmv@ 15% O2, ISO Day) 31.2 32.0 28.8 30.7 81.2† CO (ppmv, dry basis) 0.9 1.1 1.3 1.1 O2 (% volume, dry basis) 15.78 15.79 15.82 15.80 CO2 (% volume, dry basis) 2.92 2.97 2.96 2.95
Heat Input (MMBtu/hr) 95.29 94.67 95.16 95.04 131.59 Ambient Conditions
Ambient Conditions 1 Aumospheric Presuure ("Hg) 29.82 29.84 29.86 29.84 Temperature (°F): Dry bulb 79 80 82 80 (°F): Wet bulb 74 76 72 74 Humidity (lbs moisture/lb of air) 0.0166 0.0180 0.0138 0.0161 Measured Emissions 23.9 24.0 23.4 23.8 NOx (ppmv, dry basis) 27.5 27.7 27.2 27.5 42.0 NOx (ppmv @ 15% O2, ISO Day) 31.2 32.0 28.8 30.7 81.2† CO (ppmv, dry basis) 0.9 1.1 1.3 1.1 O2 (% volume, dry basis) 15.78 15.79 15.82 15.80 CO2 (% volume, dry basis) 2.92 2.97 2.96 2.95
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Measured Emissions 23.9 24.0 23.4 23.8 NOx (ppmv @ 15% O2) 27.5 27.7 27.2 27.5 42.0 NOx (ppmv @ 15% O2, ISO Day) 31.2 32.0 28.8 30.7 81.2† CO (ppmv, dry basis) 0.9 1.1 1.3 1.1 O2 (% volume, dry basis) 15.78 15.79 15.82 15.80 CO2 (% volume, dry basis) 2.92 2.97 2.96 2.95
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NOx (ppmv @ 15% O2, ISO Day) CO (ppmv, dry basis) O2 (% volume, dry basis) CO2 (% volume, dry basis) 31.2 32.0 28.8 30.7 81.2† 81.2† 81.2† 81.2† 81.2† 292 297 296 295
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O2 (% volume, dry basis) 15.78 15.79 15.82 15.80 CO2 (% volume, dry basis) 2.92 2.97 2.96 2.95
CO2 (% volume, dry basis) 2.92 2.97 2.96 2.95
2.92 (% volume, dry basis) 2.95 2.95
Visible Emissions (% ansains)
Visible Emissions (% opacity) 0 0 0 0 10 Fo (fuel factor, range = 1.600-1.834 for NG) 1.75 1.72 1.73 1.73
Via Pitot Tube Traverse (SCFH, dry basis) 4.17E+06
via O2 "F-factor" (SCFH, dry basis) 3.37E+06 3.36E+06 3.40E+06 3.38E+06
via CO2 "F-factor" (SCFH, dry basis) 3.34E+06 3.26E+06 3.29E+06
Calculated Emission Rates (via pitot tube) NOx (lbs/hr) 11.9 11.5 10.6 11.3 16.14
00 (1)
SO2 (lbs/hr, Based on fuel flow and fuel sulfur)
NOx (tons/yr) 52.2 50.5 46.5 49.7 70.70
CO (tons/yr) 1.2 1.4 1.6 1.4 51.30
SO2 (tons/yr, Based on fuel flow and fuel sulfur) 0.068 0.068 0.068 15.83
NOx (g/bhp-hr) 0.48 0.46 0.43 0.46 0.58
CO (g/bhp-hr) 0.011 0.013 0.014 0.013 0.42

^{* 100%} of permitted output at ambient temperature of 80°F

[†] EPA NSPS Performance Standard

Gas Fuel F Factor & Heating Value Calculation

, ...

Client

Florida Gas Transmission Company

Sample ID

pipeline natural gas (residue gas), St. 15

Time

16:02·

Date 8/28/95

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

				% volume		Component		Gross	Volume
	%	Molecular	Density	x		Gross	Weight	Heating Value	Fract.
Component	Volume	Wt.	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu	(Btu/SCF)	Btu
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	0.3630	28.016	0.0744	0.00027	0.6045	0	0.00	0.0	0
CO2	0.7530	44.010	0.1170	0.00088	1.9719	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0.
Methane	95.8760	16.041	0.0424	0.04065	90.9870	23879	21726.77	1013.0	971.224
Ethane	2.3070	30.067	0.0803	0.00185	4.1464	22320	925.47	1792.0	41.3414
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.3970	44.092	0.1196	0.00047	1.0627	21661	230.20	2590.0	10.2823
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.0970	58.118	0.1582	0.00015	0.3435	21308	73.19	3363.0	3.26211
n-butane	0.0800	58.118	0.1582	0.00013	0.2833	21257	60.21	3370.0	2.696
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane	0.0340	72.144	0.1904	0.00006	0.1449	21091	30.56	4008.0	1.36272
n-pentane	0.0210	72.144	0.1904	0.00004	0.0895	21052	18.84	4016.0	0.84336
n-hexane	0.0720	86.169	0.2274	0.00016	0.3665	20940	76.74	4762.0	3.42864
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
total	100.00	Average	Density	0.04468	100.0000	Gross Hea	ting Value	Gross Heatin	g Value
		Specific	Gravity	0.58403		Btu/lb	23142	Btu/SCF	1034.4

CIIC	'TIT A TT	211 225	F F 4	α
CALC	ULAIN)/Y ()r	r ra	CTORS

							Weight I	Percents	•
Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		
Oxygen	32.000	. 0	0	0.00	0.0000				0
Nitrogen	28.016	0	0	0.36	10.1698			0.602268295	
CO2	44.010	0.272273	0	0.75	33.1395	0.534352898			1.42678
CO	28.010	0.42587	0	0.00	0.0000	0			0
Methane	16.041	0.75	0.25	95.88	1537.9469	68.3093034	22.7697678		
Ethane	30.067	0.8	0.2	2.31	69.3646	3.286282746	0.82157069		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.40	17.5045	0.848157315	0.18847963		
Propene	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.10	5.6374	0.276296178	0.0575802		
n-butane	58.118	0.82759	0.17247	0.08	4.6494	0.227873136	0.04748883		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane.	72.144	0.83333	0.16667	0.03	2.4529	0.121052399	0.02421106		
n-pentane	72.144	0.83333	0.16667	0.02	1.5150	0.074767658	0.01495389		
n-hexane	86.169	0.83721	0.16279	0.07	6.2042	0.307606285	0.05981203		
H2S	34.076	0	0.0586923	0.00	0.0000	0	0		

Totals

100.00000 1688.5843 73.98569201 23.98 0.602268295 1.4267											
CALCULATED VALUES											
O2 F Factor (dry) 8674 DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air											
O2 F Factor (wet)	10654	SCF of Exhaus	t/MM Btu of I	Fuel Burned	@ 0% excess air						
Moisture F Factor 1983 SCF of Water/MM Btu of Fuel Burned @ 0% excess air											
Combust. Moisture 18.59 volume % water in flue gas @ 0% excess air											
CO2 F Factor	1024				@ 0% excess air						
Carbon Dioxide	11.81	volume % CO	2 in flue gas @	0% O2							
Predicted Fo Factor	1.77	EPA Method 3	a Fo value								
Fuel VOC % (non-C1)	6.57%	non-methane f	uel VOC conte	ent							
Fuel VOC % (non-C1,C2)	2.36%	non-methane n	on-ethane fuel	VOC conte	ent						



Florida Gas Transmission Company

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

6 N 0035-201-AC

APR 1 6 1996

BUREAU OF AIR REGULATION

April 12, 1996

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:

Air Permit No. AC09-229441

Florida Gas Transmission Company - Station 26

Citrus County, Lecanto, Florida

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 NOx 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
- -Prior to Renewal Testing: for Nox 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,

Allan Weatherford

Division Environmental Specialist

c Charlie Thompson
Roy Smith
Mark Winder
John Ludlow
Eric Peterson, Hillsborough County EPC

Gas Fuel F Factor & Heating Value Calculation

Client

Florida Gas Transmission Company

Sample ID

pipeline natural gas (residue gas)

Time 6:23 Date 3/21/95

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

				% volume		Component		Gross	Volume
	%	Molecular	Density	x	•	Gross	Weight	Heating Value	Fract.
Component	Volume	WL	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu	(Btu/SCF)	Btu
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	0.4930	28.016	0.0744	0.00037	0.8078	0	0.00	0.0	0
CO2	1.0030	44.010	0.1170	0.00117	2.5844	0	0.00	0.0	0
CO		28.010	0 .0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.1330	16.041	0.0424	0.04034	88.8320	23879	21212.20	1013.0	963.697
Ethane	2.2510	30.067	0.0803	0.00181	3.9807	22320	888.50	1792.0	40.3379
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.5020	44.092	0.1196	# 0.00060	1.3222	21661	286.41	2590.0	13.0018
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane;	0.1490	58.118	70.1582	0.00024	3 0.5191 📑	21308	110.61	3363.0	5.01087
n-butane	0.1490	58.118	0.1582	0.00024	0.5191	21257	110.35	3370.0	5.0213
Isobutene	N. B. Frank	≥ 56.102 =	0.1480	0.00000	0.0000	20840	0.00	3058.0	0
Isopeniane	0.1000	72.144	0.1904	0.00019	0.4193	21091	88.44	4008.0	4.008
n-peniane	0.1000	72.144	0.1904	0.00019	0.4193	21052	88.27	4016.0	4.016
n-bexane	0.1190	86.169	0.2274	0.00027	0.5960	20940	124.79	4762.0	5.66678
H2S W. D. T	The Constitution	34.076	៊ 0.0911 ==	. 0.00000	0.0000	7100	0.00	647.0	0
		SANTALAN AY 11 YO. Maran Santa	Spanisky (- Mr.						
total -	100.00	- Average	Density	0.04541	100.0000 [Gross Hear	ting Value	Gross Heating	y Value
		- Specific (Gravity	0.59356		Btu/lb	22910	Btu/SCF	1040.8

				CTORS

The state of the s	**					Weight Percents			
Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		.*
Oxygen	32.000	0	0	0.00	0.0000				0
Nitrogen	28.016	0	0	0.49	13.8119			0.804982658	
CO2	44.010	0.272273	0	1.00	44.1420	0.70047131			1.87034
CO	28.010	0.42587	0	0.00	0,0000	0		•	0
Methane	16.041	0.75	0.25	95.13	1526.0285	66.7048437	22.2349479		
Ethane	30.067	0.8	0.2	2.25	67.6808	3.15565165	0.78891291		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.50	22.1342	1.0554699	0.23454915		
Ргорепе	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.15	8.6596	0.41768188	0.08704503	,	
n-butane	58.113	0.82759	0.17247	0.15	8.6596	0.41768188	0.08704503		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.10	7.2144	0.3503892	0.07007952		
n-pentane	72.144	0.83333	0.16667	0.10	7.2144	0.3503892	0.07007952		
n-hexane	86.169	0.83721	0.16279	0.12	10.2541	0.50034078	0.09728799		
H2S	34.076	0	0.058692	0.00	0.0000	0	0		

Totals

99.99900 1715.7994 73.6529195 23.67 0.804982658 1.8											
CALCULATED VALUES											
O2 F Factor (dry) 8688 DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air											
O2 F Factor (wet) 10662 SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air											
Moisture F Factor 1974 SCF of Water/MM Btu of Fuel Burned @ 0% excess air											
Combust. Moisture 18.52 volume % water in flue gas @ 0% excess air											
CO2 F Factor 1030 DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air											
Carbon Dioxide	11.85	volume % C	O2 in flue gas (9 0% O2							
Predicted Fo Factor 1.76 EPA Method 3a Fo value											
Fuel VOC % (non-C1) 8.06% non-methane fuel VOC content											
Fuel VOC % (non-C1,C2)	3.98%	non-methane	non-ethane fue	I VCC cont	ent						

TABLE 2: Summary of Results Unit No. 2601

Company: Florida Gas Transmission Company

Plant: Compressor Station #26

Location: 2 miles NW of Lecanto in Citrus County

Technicians: CDC, LJB, LAB

Source: Solar Taurus Model 60S Solonox Turbine

Test Number	26C-1	26C-1*	26C-2	26C-3		
Date	3/21/95	3/21/95	3/21/95	3/21/95	•	
Start Time	9:01	9:01	11:22	13:00		FDEP
Stop Time	10:10	10:10	12:22	14:04		Permit
Turbine/Compressor Operation	10.10	10.10	12.22	17.07	Averages	Limits
Power Turbine Speed (%,NPT)	89.6	89.6	86.7	85.5	87.3	
Gas Producer Speed (%,NGP)	96.9	96.9	96.5	96.5	96.6	
Estimated Horsepower (bhp ISO Day, Solar program)	6439	6439	6149	6243	6277	6500
PCD Observed (psig)	134.7	134.7	131.0	131.1	132.3	.0200
T-1 Temperature (°F)	72.7	72.7	78.0	78.3	76.3	
T-5 Temperature (°F)	1400	1400	1401	1400	1400	
Compressor Flow (MMSCFD)	446.7	446.7	473.0	466.7	462.1	
Gas Compressor Suction Pressure (psi)	808.5	808.5	833.7	871.1	837.8	
Gas Compressor Suction Temperature (°F)	63.9	63.9	63.3	63.3	63.5	
Gas Compressor Discharge Pressure (psi)	1027.7	1027.7	1038.5	1039.9	1035.4	
Gas Compressor Discharge Temperature (°F)	99.6	99.6	96.0	95.7	97.1	
Fuel Data (Residue Gas)	77.0	77.0	70.0	73.1	77.1	
	1041	1041	1041	1041	1041	
Fuel Heating Value (Btu/SCF-HHV)			8688	8688	8688	
O2 "F-factor", based on fuel analysis	8688	8688			1030	
CO2 "F-factor", based on fuel analysis	1030	1030	1030	1030		10 10
Total Sulfur in Fuel (grains/100 SCF)	0.063	0.063	0.063	0.063	0.063 0.0501	10
Fuel Flow (MMSCF/hr)	0.0510	0.0510	0.0498	0.0497		0.0684
Heat Input (MMBtu/hr)	53.05	53.05	51.78	51.70	52.18	71.52
Ambient Conditions			60	- 60	<u> </u>	
Temperature (°F, wet)	66	66	69	69	68	
(°F, dry)	74	74	80 .	80	78	
Atmospheric Pressure ("Hg, abs.)	29.89	29.89	29.87	29.84	29.87	
Humidity (lbs/lb of air)	0.0112	0.0112	0.0124	0.0124	0.0120	
Measured Emissions				20.5		
NOx (ppmv, dry)	24.1	22.0	22.5	23.5	23.0	
NOx (ppm @ 15% O2)	28.0	25.6	26.4	27.6	26.9	42.0
NOx (ppm @15% O2, ISO Day)	29.4	26.8	27.9	29.2	28.4	154.2†
CO (ppmv, dry)	6.7	6.7	5.6	4.8	5.7	
O2 (% volume, dry)	15.82	15.82	15.88	15.88	15.86	
CO2 (% volume, dry)	3.00	3.00	2.85	2.97	2.94	·
Fo	1.69	1.69	1.76	1.69	1.71	
THC (ppmv, dry as Methane via M-25A)	0.95	0.95	0.30	0.13	0.46	
Visible Emissions (% Opacity)	0	0	0	0	0] 10
Stack Volumetric Flow Rates						
via Pitot Tube Traverse (SCFH, dry)	2.04E+06	2.04E+06	2.02E+06	1.98E+06	2.01E+06	
via O2 "F-factor" (SCFH, dry)	1.90E+06	1.90E+06	1.87E+06	1.87E+06	1.88E+06	
via CO2 "F-factor" (SCFH, dry)	1.82E+06		1.87E+06	1.79E+06		
Mass Emissions (via EPA Methods 1-4)						
NOx (lbs/hr)	5.86	5.35	5.44	5.55	5.53	8.92
CO (lbs/hr)	0.99	0.99	0.82	0.69	0.84	6.46
THC (lbs/hr)	0.081	0.081	0.025	0.011	0.039	0.37 ¥
SO2 (lbs/hr, based on fuel flow and fuel sulfur)	0.0092	0.0092	0.0090	0.0089	0.039	1.97
NOx (tons/yr)	25.7	23.4	23.8	24.3	24.2	39.1
CO (tons/yr)	4.34	4.34				
THC (tons/yr)			3.61	3.02	3.66	28.29
	0.35	0.35	0.11	0.05	0.17	1.62 ¥
SO2 (tons/yr, based on fuel flow and fuel sulfur) NOx (g/bhp-hr)	0.040	0.040	0.039	0.039	0.040	8.62
1111/14 12/DDD-DF1		114//	1 1 4 1 1 1	114114	I II AIIII	0.62
	0.413					
CO (g/bhp-hr) THC (g/bhp-hr)	0.413 0.070 0.0057	0.070 0.0057	0.061	0.050	0.060 0.0028	0.45 0.26 ¥

^{*} Reports NOx recalibration value per EPA 40 CFR 60, Appendix A, Method 20, Section 6.2.3.

[†] EPA 40 CFR 60 Subpart GG NSPS requirement

[¥] FDEP Permit limits are for non-methane Volatile Organic Compounds (VOC).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY שאכני שוני משונים אינים

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HEMOENHOUR

BUBJECT: Authority for Approval or Custom Fuel Monitoring

Schodulae Under HSPS Suppart CO

FROM: John B. Resnic, Chief

Compliance Monitoring Franch

Air Compliance Brunch Chicas Regionx II, III, IV, V, VI and IX 10T

Air Programs Branch Chiefs

Ragions I-K

The MSPS for Stationary Gas Turbines (Subpart GG) at 40 CFR 60.334(b)(2) allows for the development of custom ruel monitoming ochedulos as an alternative to daily monitoring of the sulfur and altroque content of suel fired in the surplines. Regional Offices have reen forwarding custor fuel monitoring schedules to the 6 tationery Source Compliance Division (SSCD) for consideration since it was understood that sutherity for approval of these concludes was not delegated to the Regiona. Reverence in consultation with the mission Standards and Engineering Division, it has been determined that the Regional Offices do neve the authority to approve Subper to custom fuel monitoring schedules. Therefore it is no longer necessary to forward those requests to Estadquarters for approvel.

Over the part few years, SECD has issued over twenty custon schodulas for sources using pipoline quality natural cas. In order to taintain national consistency, we recommend that any cohodulas Ragional Offices issue for natural gas be no loss stringent than the following: sulter sonttoring should

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TO 89195413470

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Enclosure

Conditions for Custom Fuel Sampling Schedule for Stationary Gas Turbines

- 1. Honitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbine.
- 2. Sulfur Homitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gasaous fuels, or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR S0.335(b)(2).
 - b. Effective the date of this custom schedule, sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, I and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
 - c. If after the monitoring required in item 2(b) above, or herein, the sulfur content of the fuel shows. Herein variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per annum. This menitoring shall be conducted during the first and third quarters of each calendar year.
 - d. Should any sulfur analysis as required in (tems 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, the owner or operator shall notify the Sate air Coherel Tourd I of such excass emissions and the custom schedula chall be re-examined by the Engironmental Protection Agency. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedula is being re-examined.
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 - 4. Records of sample analysis and fuel supply persinent to this custom schedule chall be recalled for a period of three years, and be available for inspection by personnel of (coeral, state, and local air pollution control agencies.

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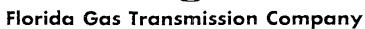
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Where courses using oil request ductom fuel monitoring schedules, Regional Offices are encouraged to contact SSCD for consultation on the appropriate fuel monitoring cohecule. However, Regions are not required to send the request librals to GBCD for approval.

If you have any questions, please contact Sally M. Farsell at FIR 382-2875.

Attachment

co: John Cronetaw Coorga Halah Robert Ajax Earl Salo



P. O. Box 945100 Maitland, Florida 32794-5100

(407) 875-5800

APR 1 6 1996

RECEIVED

April 12, 1996

CERTIFIED

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 NOx 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 Nox 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,

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 4 miles NE of Plant City

Location:

Hillsborough Co., FL on SR 582

Source:

Solar Saturn T-1001S-312F

Technicians:

CDC, L.IB, DD

Technicians: CDC, LJB, DD					
Test Number	30C-1	30C-2	30C-3		
Date	7/25/95	7/25/95	7/25/95	_	
Start Time	8:30	10:10	11:35		FDEP
Stop Time	9:44	11:10	12:35		Permit
Turbine/Compressor Operation				Averages	Limits
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 emprssr thruput cale.)		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	1
Gas Compressor Suction Temperature (°F)	81.0	81.0	31.0	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 (MNiBtu/hr)	11.01	11.05	11.07	11.04	15.76
Brake-specific Fuel Consumption (Btu/bhp-hr)	10418	10945	10957	10773	
Ambient Conditions		l			
Atmospheric Presuure ("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			1		
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 GC NCDC NOv standard					

[†] Sub part GG, NSPS NOx standard

Gas Fuel F Factor & Heating Value Calculation

Client

Florida Gas Transmission Company 50

Sample ID

pipeline natural gas (residue gas) 6:23 7/25/95

Time

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

0	%	Molecular	Density	% volume x		Component Gross	Weight	Gross Heating Value	Volume Fract.
Component	Volume	Wt.	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu		Btu
Hydrogen		2.016	0.0053	0.000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	O	0.00	0.0	O
Nitrogen	0.3840	28.016	0.0744	0.00029	0.6397	0	0.00	0.0	O
CO2	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	0.000	21644	0.00	1614.0	O
Propane	0.3750	44.092	0.1196	0.00045	1.0043	21661	217.54	2590.0	9.7125
propvlene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	O
sobutane	0.0900	<i>5</i> 8.118	0.1582	0.00014	0.3188	21308	67.93	3363.0	3.0267
n-butane	0.0720	<i>5</i> 8.118	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	O
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
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	O
total	100.00	Average	Dencity	0.04466	100.0000	Gross Heat	ing Value	Gross Heatin	v Value
iom	100.00	Specific		0.58377	100.0000	Btu/lb	23106	Btu/SCF	1032.4

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•							Weight P	ercents	
Component	Mol. Wi.	C Factor	H Factor	% volume	Fract. Wt.	Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		
Oxygen	32.000	O	O	0.00	0.0000				O
Nitrogen	28.016	O	O	0.38	10.7581			0.637383014	
CO2	44.010	0.272273	O	0.81	35.4281	0.57149832			1.52597
CO	28.010	0.42587	O	0.00	0.0000	O [*]			O
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	O	O		•
Рторале	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 .	O		
Isobutane	<i>5</i> 8.118	0.82759	0.17247	0.09	<i>5</i> .2306	0.256467027	0.0534478		
n-butane	58.118	0.82759	0.17247	0.07	4.1845	0.205173621	0.04275824		
lsobutene	56.102	0.85714	0.14286	0.00	0.0000	O	O		
lsopentane	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	0.013 <i>5</i> 355		
n-hexane	85.169	0.83721	0.16279	0.06	5.1701	0.256448311	0.04986469		
H2S	34.076	O	0.058692	0.00	0.0000	O	O		

Totals

·	99.99900		73.87902487	23.96	0.637383014	1.52597
	CA	LCULATED	VALUES			
O2 F Factor (dry)	8676	DSCF of Ex	haust/MM Btu o	f Fuel Burn	ed @ 0% excess a	11
O2 F Factor (wet)	10657	SCF of Exha	aust/MM Btu of	Fuel Burnec	i @ 0% excess air	
Moisture F Factor	1981	SCF of Wate	er/MM Bru of Fu	iel Burned (@ 0% excess air	
Combust. Moisture	18.59	volume % w	ater in flue gas	② 0% exces	s air	
CO2 F Factor	1024	DSCF of CC	2/MM Btu of Fi	uel Burned	@ 0% excess air	
Carbon Dioxide	11.80	volume % C	O2 in flue gas @	0% O2		
Predicted Fo Factor	1.77	EPA Method	3a Fo value			
Fuel VOC % (non-C1)	6.38%	non-methane	e fuel VOC conte	ent		
Fuel VOC % (non-C1,C2)	2.17%	non-methane	e non-ethane fue	VOC cont	ent	<u></u>

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY יי איצונטופגטוי וויכי שירפי

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Authority for Approval of Custom Fuel Monitoring Schodules Under MSPS Support CO SUBJECT:

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John 3. Reanid, Chief John Compliance Honitoring Stance FROM:

Air Compliance Brunch Chiefs Regions II, III, EV, V, VI and IX TOI

Air Programs Branch Chiefs Ragions I-X

The MSPS for Stationary Gas Turbines (Subpart GG) at 40 CFR 60.334(b)(2) allows for the development of curtox fuel monitoring conedulas as an alternative to daily monitoring of the subsument and nitrogen content of ruel fired in the turbinar. Regional Offices have been forwarding custom fuel monitoring achedules to the 6tationary Source Compliance Division (SSCD) for consideration cinca it was understood that authority for approval of these concedules wax not delegated to the Regions. However, in consultation with the Emission Standards and Engineering Division, it has been determined that the Regional Offices do have the authority to approve Suborn to current fuel nonverse concedulas. Therefore it is no longer necessary to forward those requests to Readquarters for approval.

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Enclosure

Conditions for Custom Fuel Sampling Schedule for Stationary Gas Turbines

- 1. Honitoring of fuel nitrogen content shall not be required while natural gas is the only fuel first in the gas turbine.
- 2. Sulfur Homitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTH reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTH D1072-80; ASTH D3031-81; ASTH D3246-81; and ASTH D4084-82 as referenced in 40 CFR 50.335(b)(2).
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 - c. If after the monitoring required in item 2(b) above, or herein, the sulfur content of the fuel shows little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide omission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.
 - d. Should any sulfur analysis as required in items 2(b) or 2(c) above indicate noncompliance with 40 CFR 50.333, the owner or operator shall notify the Sate Arc Control Tourd in the such excess emissions and the custom schedule chall be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted veckly during the interim period when this custom schedule is being re-axamined.
 - 3. If there is a change in fuel supply, the owner or operator must notify the State of such change for re-examination of this custom schedule. A substantial change in fuel quality shall be considered as a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
 - 4. Records of simple analysis and fuel supply persinent to this custom schodule chill be reclined for a period of three years, and be available for inspection by personnel of (ederal, state, and local air pollution control agencies.

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If you have any questions, please contact Sally M. Farsell at FTS 182-2875.

Attachment

ca: John Cronebaw Goorga Walah Robert Ajax Earl Salo TO:

Clair Fancy / Howard Rhodes

THROUGH:

A. A. Linero a a

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 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



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

August 1, 1996

RECEIVED

AUG 6 1996

BUREAU OF AIR REGULATION

Teresa Herron
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Ms. Herron:

Enclosed please find the publication affidavit from the Tampa Tribune for the proposed permit amendment, Intent to Issue for permits 0170035-001-AC, 0570438-002-AC, and 1230034-002-AC.

If you have any questions or need any additional information, please call me at (407)-875-5865.

Sincerely,

Clay Roesler

Division Environmental Specialist

CR/wlb

cc: Air Permit File

Compressor Stations 15, 26, and 30

enclosure

THE TAMPA TRIBUNE

Published Daily Tampa, Hillsborough County, Florida

State of Florida County of Hillsborough \} ss.

Before the undersigned authority personally appeared R. Putney, who on oath says that he is Accounting Manager of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

	LEGAL NOTICE	
n the matte	er of	
	PUBLIC NOTICE	
vas publish	ed in said newspaper in the issues of JULY 24, 1996	

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisemen; and affiant further says that he has neither paid nor promised any person, firm, or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

-	
	29
Sworn to and subscribed before me, this	ddy
of JULY	, A.D. 18.6
00.31	30
Personally Known or Produced Identification	
Type of Identification Produced	

AIR CONSTRUCTION PERMIT STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL

PROTECTION ' DRAFT Permit Nos: 0170035 001-AC-Hillsborough County 0570438 002-AC-Citrus County

The Department of Environ-mental Protection gives notice of its intent to issue an air-construction permit amendments to Florida Gas Trans-mission Company (FGT) for permit revisions to eliminate emissions limitations and revise testing requirements 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 facilities burn clean natural gas and during initial compliance testing, demonstrated compliance with all of the required emission standards. This amendment will delete emission standards and testing requirements for carbon memoxide. particulate mater (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 vill not result in increased emissions of any of these pollutants, but will simdelete emission standards and these pollutants, but will simplify the applicable permits and reduce annual testing

The visible emissions reguirements for these units will be revised form 10 percent capacity to 20 percent in accordance with the Rule 62-296.320, F.A.C. A Best Available Control Technology determination was not required. The applicant's name and address is Florida Gas Transmission Company, Post Office Box 945100, Maltland, Flarida,

The Descriment will issue the FINAL Permit Amendment, in accordance with the canditions of the enclosed DRAFT Permit Amendmen unless a response received in accordance with the following procedures results in a differ ent decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (four-teen), days from the date of publications of this Notice. Written Comments should be provided to the Department of Environmental Protection, Bureau of Air Regulation, 2600 Blair Stone Road, MS 5505/ Tallahassee, Florida 32399-2400. Any written comments filed shall be made avallable for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and regulre, If applicable, another Public No-

In addition, any person Whose substantial interests are affected by this proposed permitting decision may petition for an administrative pro-ceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the infortition must contain the informatl 1 set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000 within 14 days of publication of this Notice, Peti-tioner, shall mail a copy of the petition to the applicant at the laddress indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person ministrative determination (hearing) under Section 120.57. F.

The Petition shall contain

the following information; (a

The name, address, and the telephone number of each petitioner, the applicant's name

Department's action or pro-posed action; (d) A statement

of the material facts disputed

by Petitioner, it any; (e) A statement of facts which peti-tioner contends warrants re-versal ar modification of the

Department's action or pro-

posed action; (f) A statement

of which rules or statutes petitioner contends require rever-

sal or modification of the De-

partment's action or proposed

action; and (g) A statement of

the re et sought by petitioner, stating precisely the action petitioner wants the Depart-ment to take with respect to

the Department's action or

proposed action.

DRAFT Permit Amendment. Persons whose substantial interests will be affected by any decision of the Deportment with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the Teo Irements specified above and be filed (received) within 14 days of receipt of this notice, in the Office of General Counsel of the Department, Failure to pe-tition within the allotted time frame constitutes a waiver of any rights such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent in-tervention will only be at the approval of the presiding offi-cer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code. A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m. Monday through Friday, except legal and a dress, the Department Permit, File. Number, and the county in which the project is proposed; (b) A statement of how and when each petitioner, received notice of the Department. holidays, at the Department offices listed below. The complete project file includes the Draft' Permit Amendment ment's action or proposed ac-tion; (c):A statement of how each petitioner's substantial interests are affected by the and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Source Review Section at the Department's Tallahossee address and at (904)488-1344. Department of Environmental Protection 2

in a petition is filed, the ad-

ministrative hearing process

is designed to formulate ogen-

cy action. Accordingly, the Departments, final action may be different from the position adden by at in this

Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Department of Environmental Protection Southwest District Office 3804 Coconut Palm Drive Tampa, Florida 33619-8219 (813)744-6100 Hillsborough County Environmental **

Protection Commission 1410 North 21st Street Tompoù Fiorida 33605 (813)272-5530

INA S. KENNEDY
Notary Public, State of Florida
My comm. expires April 21, 2000
No. CC548841



Department of Environmental Protection

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

July 2, 1996

Virginia B. Wetherell Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Allan Weatherford Environmental Specialist Florida Gas Transmission Company Maitland, Florida 32794-5100

RE: DRAFT Permit Amendment Nos: 0170035-001-AC Hillsborough County 0570438-002 -AC Citrus County 1230034-002-AC Taylor County

Dear Mr. Weatherford:

Attached is one copy of the Proposed Permit Amendment, Intent to Issue, and Public Notice of Intent to Issue (for publication by Florida Gas Transmission) for each of the above mentioned facilities located in Florida.

The "PUBLIC NOTICE" must be published by the applicant within 30 days of receipt of this letter. The applicant shall provide Proof of publication, i.e., newspaper affidavit, to the permitting authority office within 7 (seven) days of publication.

Please submit any written comments you wish to have considered concerning the proposed action to Mr. A. A. Linero, P.E., Administrator, New Source Review Section. If you have any other questions, please contact Teresa Heron at (904)488-1344.

Sincerely,

Chief

Bureau of Air Regulation

CHF/th/t

Enclosure

Copies furnished to:

Robert Leech, NED Bill Thomas, SWD Rick Kirby, EPCHC

Solution Solution
No Insurance Coverage Provided. Do not use for International Mail (See reverse)

Do not use for International Mail (See reverse)

Set 10

Street Number

Street Number

Street Number

Continue State & ZIP Code

Postage

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered

Return Receipt Showing to Whom,
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7

INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of an Application for Permit by:

Mr. Allan Weatherford Environmental Specialist Florida Gas Transmission Company Post Office Box 945100 Maitland, Florida 32794-5100 DRAFT Permit Amendment Nos:
AC 29-228821 Hillsborough County
AC 09-229441 Citrus County
AC 62-229319 Taylor County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit amendment (copy of DRAFT Permit amendment enclosed) for a portion of the proposed changes at the sources detailed in the application specified above, for the reasons stated below.

The applicant, Florida Gas Transmission Company (FGT), applied on May 10, 1996 to the Department for permit revisions to eliminate emissions limitations and revise testing requirements which exceed those specified by rule for its compressor stations located at Compressor Station No. 30, Northeast of Plant City on SR 582 in Hillsborough County, Compressor Station No. 26, Northwest of Lecanto in Citrus County, and Compressor Station No. 15, North of Perry on C-361 in Taylor County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that air construction permit amendments as well as approval from EPA (of the Custom Fuel Monitoring Schedule) are required prior to operating these facilities as proposed.

The Department will issue the permit amendment as stated in the attached Department letter unless a petition for an administrative proceeding (hearing) is filed in accordance with Section 120.57, F.S. The Department will not act on the Custom Fule Monitoring Schedule until approval is given by EPA.

The Department intends to issue these air construction permit amendments based on the belief that reasonable assurances have been provided to indicate that operation of the source will not adversely impact air quality, and the sources will comply with all appropriate provisions of Chapters 62-4, 62-210, 62-212, 62-272, 62-296, and 62-297,

Pursuant to Section 403.815, F.S., and Rule 62-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENT." The notice shall be published one time only within 30 (thirty) days of receipt of this notice in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general

circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in each county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation at the address below within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit

The Department will issue FINAL Permit Amendment, in accordance with the conditions of the enclosed DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of "PUBLIC NOTICE OF INTENT TO ISSUE PERMIT AMENDMENT." Written comments should be provided to the permitting authority office. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

In addition, any persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) through the Office of General Counsel of the Department at the address listed below. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of the receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated below at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the proposed source is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by petitioner, if any;
- (e) A statement of facts which the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this DRAFT Permit Amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above, and be filed (received) within 14 days of receipt of this intent with in the Office of General Counsel of the Department at the address listed below. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, F.A.C.

Executed in Tallahassee, Florida.

C. H. Fancy, Chief

Bureau of Air Regulation

Florida Gas Transmission AC29-228821 Hillsborough County, AC09-229441 Citrus County, AC62-229319 Taylor County

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE PERMIT AMENDMENT and all copies were certified mailed before the close of business on $\neg \neg \neg \neg \neg \neg \neg \varphi$ to the listed persons.

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.

Cierk

Date

Enclosures

Referenced regulatory agency offices:

Permitting Authority Office

Department of Environmental Protection Bureau of Air Regulation 2600 Blairstone Road, MS 5505 Tallahassee, Florida, 32399-2400 (904)488-1344

Legal Office

Department of Environmental Protection Office of General Counsel 3900 Commonwealth Boulevard, MS 35 Tallahassee, Florida, 32399-3000 (904)488-9730

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT AMENDMENTS

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT Permit Nos: 0170035-001-AC - Hillsborough County 0570438-002-AC - Citrus County

The Department of Environmental Protection (Department) gives notice of its intent to issue air construction permit amendments to Florida Gas Transmission Company (FGT) for permit revisions to eliminate emissions limitations and 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 facilities burn clean natural gas and, during initial compliance testing, demonstrated compliance with all of the required emission standards. This amendment 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. A Best Available Control Technology determination was not required. The applicant's name and address is Florida Gas Transmission Company, Post Office Box 945100, Maitland, Florida.

The Department will issue the FINAL Permit Amendment, in accordance with the conditions of the enclosed DRAFT Permit Amendment unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Notice. Written comments should be provided to the Department of Environmental Protection, Bureau of Air Regulation, 2600 Blair Stone Road, MS 5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in this DRAFT Permit Amendment, the Department shall issue a Revised DRAFT Permit Amendment and require, if applicable, another Public Notice.

In addition, any person whose substantial interests are affected by this proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000 within 14 days of publication of this Notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information; (a) The name, address, and the telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrants reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and, (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this DRAFT Permit Amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice, through the Office of General Counsel of the Department. Failure to petition within the allotted time frame constitutes a waiver of any rights such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 60Q-2.010, Florida Administrative Code.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department offices listed below. The complete project file includes the Draft Permit Amendment, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Source Review Section at the Department's Tallahassee address and at (904)488-1344.

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 (904)488-1344

Hillsborough County Environmental Protection Commission 1410 North 21st Street Tampa, Florida 33605 (813)272-5530 Department of Environmental Protection Southwest District Office 3804 Coconut Palm Drive Tampa, Florida 33619-8219 (813)744-6100



Department of Environmental Protection

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

Virginia B. Wetherell Secretary



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 Amendments to Air Construction Permits: AC 29-228821 (Station No 30) Hillsborough County

AC 09-229441 (Station No. 26) Citrus County

AC 62-229319 (Station No. 15) Taylor County

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

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

PERMITS: AC 29-228821 and AC 09-229441

SPECIFIC CONDITION NO. 1

This condition will be modified to exclude the emission limits standard for all pollutants except for nitrogen oxides (NO_x) and sulfur dioxide (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.

Mr. Allan Weatherford Florida Gas Transmission Co. Page 2

FROM:





POLLUTANT	lbs/hr	tons/yr	Emission Factor
NOx	3.95	17.3	1.49 g/bhp-hr
СО	5.88	25.75	2.22 g/bhp-hr
VOC(s)	0.25	1.10	0.95 g/bhp-hr
(non-methane)			
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.

PERMIT AC 09-229441

POLLUTANT	lbs/hr	tons/yr	Emission Factor
NOx	8.92	39.05	0.62 g/bhp-hr
СО	6.46	28.29	0.45 g/bhp-hr
VOC(s)	0.37	1.62	0.26 g/bhp-hr
(non-methane)			
PM	0.35	1.51	5 lbs/MMscf
PM10	0.35	1.51	5 lbs/MMscf
S02	1.97	8.62	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 (AC29-228221) and 8.62 TPY (AC09-229441).

^{*} Based on 100% load conditions.

^{*} Based on 100% load conditions.

Mr. Allan Weatherford Florida Gas Transmission Co. Page 3

Standard for Nitrogen Oxides

NOx emissions shall not exceed 42 ppmv at 15% oxygen on a dry basis (Pased on a 100% load conditions). Annual emissions shall not exceed 17.3 TPY (AC 29 228221) and 39.05 TPY (AC 09-229441).

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	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 OrganicConcentrations 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.

Mr. Allan Weatherford Florida Gas Transmission Co. Page 4



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).

CUSTOM FUEL MONITORING SCHEDULE

AC 29-228821, AC 09-229441 and AC 62-229319

The custom monitoring schedule will be incorporated by reference after approval by EPA, will be incorporated by reference. Currently, EPA is in the process of reviewing FGT request.

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

Howard L. Rivodes, Director Division of Air Resources Management

HLR/th/t

Attachment to be Incorporated

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

cc: Robert Leech, NED Bill Thomas, SWD Rick Kirby, EPCHC TO:

Clair Fancy

THRU:

A. A. Linero

FROM

Teresa Heron TH by Gay

DATE:

July 2, 1996

SUBJECT:

Florida Gas Transmission - Amendments

Hillsborough County, Citrus County and Taylor County

Attached is a letter modifying a construction permit for the above mentioned facilities. These facilities burn clean natural gas and, during initial compliance testing, demonstrated compliance with all of the required emission standards. This amendment 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.

In addition, 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.

I recommend your approval and signature.

TH/t

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

RECEIVED

May 9, 1996

OVERNIGHT

MAY 1 U 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

REMITTANCE STATEMENT

VOUCHER NO. INVOICE NO. PORCHASE ORDER INV050696 5-6-96 INV050696 250.00	DISCOUNT	NET
	TOTAL	250.00

SPECIAL INSTRUCTIONS:

Permit AC29-228821/AC09-229441/AC62-229319 amendment application fee

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

ENRON

P. O. Box 1188 Houston, TX 77251-1188

311

CHECK 0622510560

CHECK DATE -5-9-96

PAY EXACTLY Two hundred and fifty and no/100

THIS CHECK IS VOID UNLESS PRINTED ON BLUE BACKGROUND

250.00

NOT VALID AFTER 90 DAYS

PAY TO THE

Florida Department of Environmental Protection ORDER OF

Twin Towers Office Building

2600 Blair Stone Road

Tallahassee, FL 32399-2400

CITIBANK DELAWARE

NOT VALID OVER \$5000.00 UNLESS COUNTERSIGNED

FIELD DISBURSEMENT ACCOUNT

0510438-002 AC - Zunk 0170035-001AC 1230034-002 AC



Department of Environmental Protection



Lawton Chiles Governor Twin Towers Office Building 2600 Blair Scone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

May 6, 1996

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

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

Dear Mr. Wetherford:

The Bureau of Air Regulation received your, request to amend permit AC29-228821, Station 30; AC09-229441, Station 26; AC62-229319, Station 15. According to Rule 62-4.050(4) (q) 4., before we can begin processing your request, we will need a \$250 processing fee. If you have any questions, please call Kanani Winans at (904)488-1344.

Sincerely,

A. A. Linero, P. E.

Administrator New Source Review Section

AAL/kw

SENDER: Complete items 1 and/or 2 for additional services. Complete items 3, and 4a & b.	I also wish to receive the following services (for an extra ex
Print your name and address on the reverse of this form so the return this card to you. Attach this form to the front of the mailpiece, or on the back does not permit. Write "Return Receipt Requested" on the mailpiece below the art The Return Receipt will show to whom the article was delivered a	if space 1. Addressee's Address 3.
delivered.	Consult postmaster for fee.
3. Article Addressed to:	4a. Article Number 2 127 633 20 6
Mr. Allan Wetherford	4b. Service Type
Division Environmental Specialist	Registered Insured
Florida Gas Transmission AND	Certified
Post Office Box 945100	Merchandise
Maitland, Florida 32794-5100	7. Date of Delivery
MAY 0 9 1996	
5. Signature (Addressee)	8. Addressee's Address (Only if requested and fee is paid)
6. Signature/Agent) SPS 321	F
Form 3811/December (1991 +U.S. GPO: 1993-352	714 DOMESTIC RETURN RECEIPT

Z 127 633 206



Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

	(See Reverse)		
	Sent to Willow With	Lolad	
	Street and No.	10 March	
:	P.O. State and ZIP Code	32.79	
	Postage	\$ 510	\mathcal{L}
	Certified Fee		
	Special Delivery Fee		
	Restricted Delivery Fee		
1993	Return Receipt Showing to Whom & Date Delivered		
PS Form 3800, March 1993	Return Receipt Showing to Whom, Date, and Addressee's Address		
U, Mi	TOTAL Postage & Fees	\$	
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1230634-002-AC

Florida Gas Transmission Company

P. O. Box 945100 Maitland, Florida 32794-5100

NORTHEAST DISTRICT (407) 875

DEP-JACKSONVILLE

April 12, 1996

Ms. Rita Felton Florida Department of Environmental Protection Northeast District 7825 Baymeadows Way, Suite B-200 Jacksonville, FL 32256-7577

Dear Ms. Felton:

Re:

Florida Gas Transmission Company - Station 15

Turbine Compressor 1507, Air Permit No. AC62-229319

Florida Gas Transmission Company (FGT) requests approval for a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in the natural gas fuel for each of the referenced turbine units.

Pursuant to Specific Condition 13, FGT requests approval of a custom monitoring schedule for sampling and analyzing nitrogen and sulfur in its fuel gas. 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,

Allan Weatherford

Division Environmental Specialist

c Glenn Sellars

Roy Smith

Norman Tedder

TABLE 2 **Summary of Results** Unit No. 1507

APR 1 7 1996

NORTHEAST DISTRICT

Solar Mars Model 90S Technicians: CDC, LJB, DLD

Compressor Station No. 15

Florida Gas Transmission Company

6 miles N of Perry on C-361 in Taylor County, FL

MENANCH Test Number 15C-4 15C-5 15C-6 CKSONVILLE 8/29/95 8/29/95 8/29/95 Date PDPP Start Time 8:50 9:13 10:37 Stop Time 9:00 10:21 11:50 Permit Turbine/Compressor Operation Averages Limits Power Turbine Speed (NPT, %) 94.6 94.2 93.3 94.0 Gas Producer Speed (NGP, %) 100.9 100.8 100.5 100.7 Estimated Horsepower (Solar Compressor Shaft, bhp) 11301 11326 11254 11294 11261* Engine Compressor Discharge Pressure (PCD, psig) 180.6 179.4 176.3 178.8 Combustor Air Inlet Temperature (T-1, °F) 84.0 85.9 88.5 86.1 Power Turbine Exhaust Temperature (T-5, °F) 1290 1290 1290 1291 771.2 Gas Compressor Suction Pressure (psig) 765.3 768.9 779.5 Gas Compressor Suction Temperature (°F) 72.9 72.3 72.0 72.4 Gas Compressor Discharge Pressure (psig) 1059.0 1065.8 1071.4 1065.4 128.0 Gas Compressor Discharge Temperature (°F) 128.1 128.3 127.7 Compressor Flow (MMSCFD) 580.3 574.0 572.2 575.5 Turbine Fuel Data (Residue Gas) 1034 1034 1034 1034 Fuel Heating Value (Btu/SCF, HHV) 0.5840 0.5840 0.5840 Fuel Specific Gravity 0.5840 O2 "F-factor" (DSCFex/MMBtu @ 0% excess air) 8674 8674 8674 8674 CO2 "F-factor" (DSCFex/MMBtu @ 0% excess air) 1024 1024 1024 1024 Total Sulfur in Fuel (grains Sulfur/100 SCF fuel) 0.059 0.059 0.059 0.059 10 Fuel Flow (MMSCFH) 0.0921 0.0915 0.0920 0.0919 0.1265 Heat Input (MMBtu/hr) 95.29 94.67 95.16 95.04 131.59 **Ambient Conditions** Atmospheric Presuure ("Hg) 29.82 29.84 29.86 29.84 Temperature (°F): Dry bulb 79 80 82 80 74 72 74 (°F): Wet bulb 76 Humidity (lbs moisture/lb of air) 0.0166 0.0180 0.0138 0.0161 Measured Emissions NOx (ppmv, dry basis) 23.9 24.0 23.4 23.8 NOx (ppmv @ 15% O2) 27.5 27.7 27.2 27.5 42.0 NOx (ppmv @ 15% O2, ISO Day) 31.2 32.0 28.8 30.7 81.2† CO (ppmv, dry basis) 0.9 1.1 1.3 1.1 O2 (% volume, dry basis) 15.78 15.79 15.82 15.80 CO2 (% volume, dry basis) 2,92 2.97 2.96 2.95 Visible Emissions (% opacity) 0 0 10 0 0 Fo (fuel factor, range = 1.600-1.834 for NG) 1.72 1.75 1.72 1.73 Stack Volumetric Flow Rates via Pitot Tube Traverse (SCFH, dry basis) 4.17E+06 4.02E+06 3.80E+06 4.00E+06 via O2 "F-factor" (SCFH, dry basis) 3.37E+06 3.36E+06 3.40E+06 3.38E+06 via CO2 "F-factor" (SCFH, dry basis) 3.34E+06 3.26E+06 3.29E+06 3.30E+06 Calculated Emission Rates (via pitot tube) NOx (lbs/hr) 11.9 11.5 10.6 <u> 11.3</u> 16.14 CO (lbs/hr) 11.71 0.27 0.32 0.36 0.32 SO2 (lbs/hr, Based on fuel flow and fuel sulfur) 0.016 0.015 0.016 0.015 3.61 NOx (tons/yr) 52.2 46.5 49.7 70.70 50.5 CO (tons/yr) 1.2 1.4 51.30 1.4 1.6 SO2 (tons/yr, Based on fuel flow and fuel sulfur) 0.068 0.068 0.068 0.068 15.83 NOx (g/bhp-hr) 0.48 0.46 0.43 0.46 0:58

CO (g/bhp-hr)

0.011

0.013

0.014

0.013

0.42

^{100%} of permitted output at ambient temperature of 80°F

[†] EPA NSPS Performance Standard

Gas Fuel F Factor & Heating Value Calculation

Client

Florida Gas Transmission Company

Sample ID

pipeline natural gas (residue gas), St. 15

Time Date 16:02 8/28/95

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

•				% volume		Component		Gross	Volume
	%	Molecular	Density	x		Gross	Weight	Heating Value	Fract.
Component	Volume	Wt.	(lb/ft3)	Density	weight %	Btu/lb	Fract. Btu	(Btu/SCF)	Btu
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	0.3630	28.016	0.0744	0.00027	0.6045	0	0.00	0.0	0
CO2	0.7530	44.010	0.1170	0.00088	1.9719	0	0.00	0.0	0
CO .		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.8760	16.041	0.0424	0.04065	90.9870	23879	21726.77	1013.0	971.224
Ethane	2.3070	30.067	0.0803	0.00185	4.1464	22320	925,47	1792.0	41.3414
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.3970	44.092	0.1196	0.00047	1.0627	21661	230.20	2590.0	10.2823
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.0970	58.118	0.1582	0.00015	0.3435	21308	73.19	3363.0	3.26211
n-butane	0.0800	58.118	0.1582	0.00013	0.2833	21257	60.21	3370.0	2.696
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane	0.0340	72.144	0.1904	0.00006	0.1449	21091	30.56	4008.0	1.36272
n-pentane	0.0210	72.144	0.1904	0.00004	0.0895	21052	18.84	4016.0	0.84336
n-hexane	0.0720	86.169	0.2274	0.00016	0.3665	20940	76.74	4762.0	3.42864
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0 ,
total	100.00	Average Density 0.04468		100.0000	Gross Heating Value		Gross Heating Value		
		Specific	Gravity	0.58403		Btu/lb	23142	Btu/SCF	1034.4

CALCULATION OF F FACTORS

						Weight Percents			
Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		
Oxygen	32.000	0	0	0.00	0.0000				0 、
Nitrogen	28.016	0	0	0.36	10.1698			0.602268295	
CO2	44.010	0.272273	0	0.75	33.1395	0.534352898			1.42678
CO	28.010	0.42587	0	0.00	0.0000	0 .			0
Methane	16.041	0.75	0.25	95.88	1537.9469	68.3093034	22.7697678		
Ethane	30.067	0.8	0.2	2.31	69.3646	3.286282746	0.82157069		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.40	17.5045	0.848157315	0.18847963		
Propene	42.077	0.85714	0.14286	0.00	0.0000	0	0 .		
Isobutane	58.118	0.82759	0.17247	0.10	5.6374	0.276296178	0.0575802		
n-butane	58.118	0.82759	0.17247	0.08	4.6494	0.227873136	0.04748883		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane.	72.144	0.83333	0.16667	0.03	2.4529	0.121052399	0.02421106		
n-pentane	72.144	0.83333	0.16667	0.02	1.5150	0.074767658	0.01495389		
n-hexane	86.169	0.83721	0.16279	0.07	6.2042	0.307606285	0.05981203		
H2S	34.076	0	0.0586923	0.00	0.0000	0	0		

Tota	als
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	100.00000	1688.5843	73.98569201	23.98	0.602268295	1.42678			
CALCULATED VALUES									
O2 F Factor (dry) 8674 DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air									
22 F Factor (wet) 10654 SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air									
Moisture F Factor	1980	SCF of Water/MM Btu of Fuel Burned @ 0% excess air							
Combust. Moisture	18.59	volume % water in flue gas @ 0% excess air							
CO2 F Factor	1024	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air							
Carbon Dioxide	11.81	volume % C	O2 in flue gas @	0% O2					
Predicted Fo Factor	1.77	EPA Method	i 3a Fo value		,	•			
Fuel VOC % (non-C1)	6.57%	non-methane	e fuel VOC conte	ent					
Fuel VOC % (non-C1,C2)	2.36%	non-methane	e non-ethane fue	VOC cont	ent				