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DEC 26 2003

BUREAU OF AIR REGULATION

December 22, 2003

Mr. Wayne Martin
Pinellas County Department of Environmental Management
Air Quality Division
300 S. Garden Ave.
Clearwater, Florida 34616

Re: Visible Emissions Test Report
Higgins Peaking Units 1, 2, 3, and 4
Title V Air Operation Permit No. 1030012-002-AV

Dear Mr. Martin:

Please find enclosed a report of visible emissions testing performed on Progress Energy Florida's Higgins Peaking Units 1, 2, 3, and 4 while operating on fuel oil. Testing was conducted on December 2 and 17, 2003 by Ms. Debbie Telemeco-Anders and Mr. Loyde Fry of our air test team.

The enclosed test report also serves as an attachment to the facility's title v permit renewal application, submitted to the agency on July 1, 2002. The units were not able to operate on fuel oil during prior to the renewal application submittal.

Should you have any questions, please do not hesitate to call Ms. Debbie Telemeco-Anders at (727) 826-4136.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Lydon".

Matthew Lydon
Environmental Specialist

cc: Mr. Scott Sheplak
Mr. Joel Smolen

**Source Test Report
for
Visible Emissions Evaluation**

**Higgins
Combustion Turbine
UNITS P1 – P4**

**Title V Air Operating Permit
No. 1030012-002-AV**

December 18, 2003

Prepared by:

Environmental Services Section
Progress Energy Corporation
100 Central Avenue
MAC BB1A
St. Petersburg, FL 33701
(727) 826-4136

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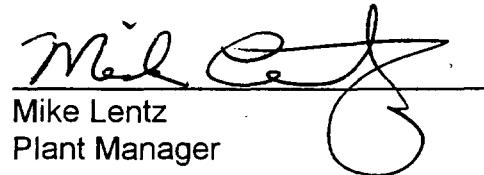
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To the best of my knowledge, all applicable field procedures and calculations comply with Florida Department of Environmental Protection requirements, and all test data and plant operating data are true and correct.


Mike Lentz
Plant Manager

12/19/03
Date

1.0 INTRODUCTION

1.0 INTRODUCTION

The Environmental Services Section, Progress Energy Corporation has performed visible emissions (VE) compliance testing on its Higgins, Combustion Turbines Units P1 – P4 in Pinellas County, Florida. The testing occurred on December 2 and December 17, 2003.

EPA Method 9 testing was performed by Ms. Debbie Telemeco-Anders, VE Certification No. 309490 (certification expiration date: February 19, 2004) and Mr. Loyde Fry, VE Certification No. 309489 (certification expiration date: February 19, 2004), to satisfy conditions of the Florida Department of Environmental Protection permit indicated below.

Title V Air Permit	Source Name	Source Numbers
No.1030012-002-AV	Higgins Combustion Turbines	P1 – E.U. -004 P2 – E.U. -005 P3 – E.U. -006 P4 – E.U. -007

2.0 SUMMARY AND DISCUSSION OF RESULTS

2.0 SUMMARY AND DISCUSSION OF RESULTS

For the Higgins Combustion Turbine Units P1 – P4, the highest six-minute average opacities are summarized below. The VE data sheets and the observer's certifications are located in Appendix A. The graph noting the maximum heat input versus ambient temperature for the peaking units are included in Appendix B.

Source	Highest Average 6-minute Opacity	Unit Load (MW)	Average Ambient Temperature (°F)	Fuel Flow (Gal / Hr)	Btu / gal	Expected Min / Max Heat Input (MMBtu/Hr)	Unit Heat Input (MMBtu/Hr)
P1 E.U. -004	18.1	29	58	3300	137,381	482 / 535	453
P2 E.U. -005	19.8	26	75	3120	137,381	466 / 490	429
P3 E.U. -006	16.9	32	73	3420	137,381	524 / 552	470
P4 E.U. -007	16.0	33	75	3480	137,381	521 / 548	478

The sources were found to be in compliance.

3.0 FIELD AND ANALYTICAL PROCEDURES

3.0 FIELD AND ANALYTICAL PROCEDURES

The observer, qualified in accordance with EPA Method 9, used the following procedures for visually determining the opacity of emissions.

1. The qualified observer stood at a distance sufficient to provide a clear view of the emissions, with the sun oriented in the 140-degree ($^{\circ}$) sector to his back. Consistent with maintaining the above requirement, the observer made his observations from a position such that his line of vision was approximately perpendicular to the plume direction. The observer's line of sight did not include more than one plume at a time when multiple stacks were involved.
2. The observer recorded the name of the plant, emission location, type of facility, observer's name and affiliation, and the date on the field data sheet. The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background were recorded on a field data sheet at the time opacity readings were initiated and completed.
3. Opacity observations were made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer did not look continuously at the plume, but instead observed the plume momentarily at 15-second intervals.
4. Opacity observations were recorded to the nearest 5 percent at 15-second intervals on the Visible Emission Observation Form. A minimum of 24 observations were recorded. Each momentary observation recorded was deemed to represent the average opacity of emissions for a 15-second period.
5. Opacity is determined as an average of 24 consecutive observations recorded at 15-second intervals (i.e., highest 6-minute average). To find the average, the observations recorded on the field data sheet are divided into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time, and in no case shall two sets overlap. For each set of 24 observations, the average is calculated by summing the opacity of the 24 observations and dividing this sum by 24. If an applicable standard specifies an averaging time requiring more than 24 observations, the average is calculated for all observations made during the specified time period. The average opacity is recorded on a field data sheet.

APPENDIX A

VISIBLE EMISSION TEST DATA



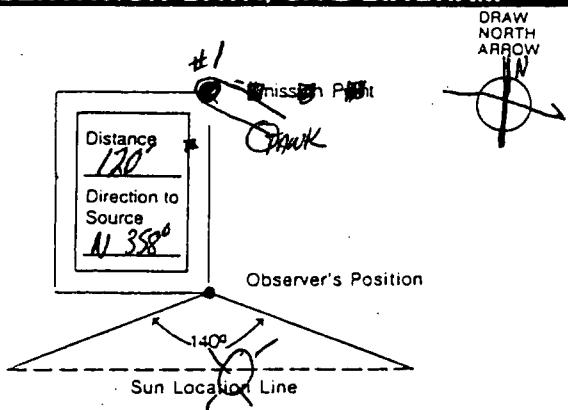
RECORD OF VISUAL DETERMINATION OF OPACITY

SOURCE/PROCESS INFORMATION

FACILITY NAME		Higgins Power Plant	
SOURCE NAME	E.I.L I.D. - 004	PI	PERMIT NUMBER
LOCATION ADDRESS	1030012-002-AV 998 EAST Shore Drive		
CITY	Oldsmar	STATE	FL
UNIT LOAD	29 MW	HEAT INPUT	45.3 MM Btu/hr
CONTROL EQUIPMENT	NA	OPERATING MODE	Auto
FUEL TYPE/RATE	#2 fuel oil	PERMITTED RATE	
DESCRIBE EMISSION POINT	4032 gal/hr		

OBSERVATION RECORD

DATE	1/2/19	STACK A				STACK B			
HOUR	MINUTE	0	15	30	45	0	15	30	45
1025	0	15	15	20	15				
	1	20	20	25	20				
	2	15	15	20	20				
	3	20	15	15	20				
	4	15	25	20	15				
30	5	15	15	20	15				
	6	20	15	15	20				
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20	55	20	20	15	15				
	56	20	15	15	20				
	57	15	15	15	15				
	58	15	15	20	20				
1124	59	15	20	20	15				



SUMMARY OF AVERAGE OPACITY

SET NUMBER	TIME		OPACITY	
	START	END	SUM	AVERAGE
84	1101	1107	435	18.1

COMPLIANCE INFORMATION

RANGE OF OPACITY READINGS
MAXIMUM 20 MINIMUM 15
HIGHEST 5 MINUTE AVERAGE 18.1

COMMENTS

55/58 - 1020 55/58 - 1115 L8°
54/58 - 1045
54/58 - 1100

OBSERVER

Layne Fry 1,4 DATE 12/17/03
SIGNATURE

1998-1999

~~SEARCHED~~ ~~INDEXED~~ ~~SERIALIZED~~
NUMBER 1309409

John May
OBSERVER CERTIFICATION NUMBER
309489

1309489

EXPIRATION DATE 2/19/04



RECORD OF VISUAL DETERMINATION OF OPACITY

SOURCE/PROCESS INFORMATION

OBSERVATION RECORD

FACILITY NAME Higgins Power Plant
 SOURCE NAME F.U.I.D - 005 P2 PERMIT NUMBER 1030012-001-AV
 LOCATION ADDRESS 998 EAST Shore Drive
 CITY Oldsmar STATE FL ZIP
 UNIT LOAD 26 MW HEAT INPUT 429 MMBtu/hr.
 CONTROL EQUIPMENT NONE OPERATING MODE AUTO
 FUEL TYPE RATE #2 fuel oil PERMITTED RATE 4033 gal./hr.

DESCRIBE EMISSION POINT Top of stack

HEIGHT ABOVE GROUND LEVEL 50 FT

HEIGHT OF OBSERVATION POINT 6 FT

EMISSIONS DESCRIPTION

DESCRIBE EMISSIONS

START CONTINUOUS

END continuous

PLUME COLOR BLACK

PLUME TYPE Lofting

WATER DROPLETS PRESENT

 Yes No Attached Detached

METEOROLOGICAL INFORMATION

BACKGROUND

START sky

END sky

BACKGROUND COLOR

START blue

END blue

SKY CONDITIONS - CLOUD COVER

START CLEAR

END CLEAR

AMBIENT TEMPERATURE

START 75°F

END 75°F

WIND SPEED

START 5-10

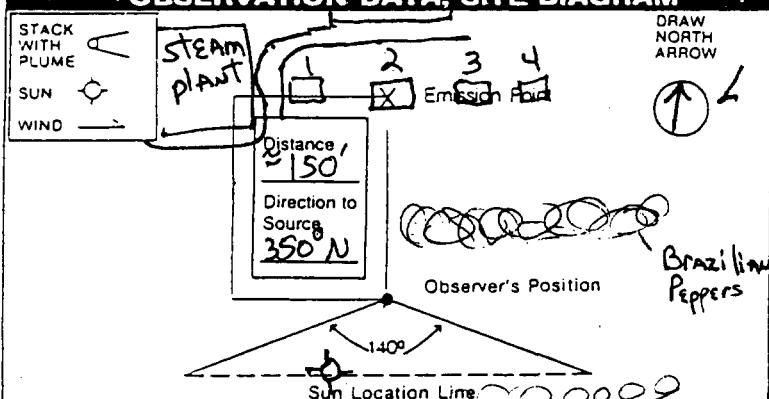
END 5-10

WIND DIRECTION

START NE

END NE

OBSERVATION DATA, SITE DIAGRAM



SUMMARY OF AVERAGE OPACITY

SET NUMBER	TIME		OPACITY	
	START	END	SUM	AVERAGE
1337	1343		475	19.79

COMPLIANCE INFORMATION

RANGE OF OPACITY READINGS
 MAXIMUM 20
 HIGHEST 5 MINUTE AVERAGE 20
 MINIMUM 10

COMMENTS

Time	WET	Dry
1325	65	75
1343	64	74
1358	65	75
1413	65	74
1425	65	75

7° L

DATE	12-2-03	STACK A	2	STACK B					
HOUR	MINUTE	0	15	30	45	0	15	30	45
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	1	15	15	15	15				
	2	20	15	15	20				
	3	15	15	20	20				
1330	4	20	20	20	20				
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1340	14	20	20	20	20				
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	58	20	20	20	20				
	59	20	20	20	20				

OBSERVER: Debbie Telmeaco-Anders DATE: 12-2-03
 OBSERVER'S SIGNATURE: Debbie Telmeaco-Anders
 OBSERVER CERTIFICATION NUMBER: 309490 EXPIRATION DATE: 2/19/04



RECORD OF VISUAL DETERMINATION OF OPACITY

SOURCE/PROCESS INFORMATION

OBSERVATION RECORD

FACILITY NAME		Higgins Power Plant	
SOURCE NAME	F.U.I.D.	PERMIT NUMBER	1030012-002-AV
LOCATION ADDRESS		998 East Shore Drive	
CITY	Oldsmar	STATE	FLA
UNIT LOAD	32 MW	HEAT INPUT	470 MM Btu/hr.
CONTROL EQUIPMENT	None	OPERATING MODE	AUTO
FUEL TYPE/RATE	No. 2 fuel oil	PERMITTED RATE	4494 gal/hr
DESCRIBE EMISSION POINT	Top of stack		
HEIGHT ABOVE GROUND LEVEL	50 ft	HEIGHT OF OBSERVATION POINT	6 ft

EMISSIONS DESCRIPTION

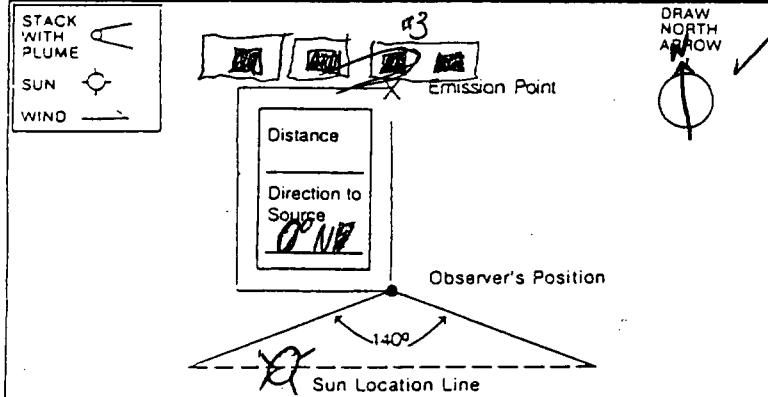
DESCRIBE EMISSIONS			
START	continuous	END	continuous
PLUME COLOR	black	PLUME TYPE	lofting

WATER DROPLETS PRESENT
 Yes No Attached Detached

METEOROLOGICAL INFORMATION

BACKGROUND	BACKGROUND COLOR			
START	SKY	END	SKY	
	START	blue	END	blue
SKY CONDITIONS - CLOUD COVER	AMBIENT TEMPERATURE			
START	clear	END	clear	
	START	74°	END	72°
WIND SPEED	WIND DIRECTION			
START	5-10 mph	END	10-15 mph	
	START	10-15 mph	END	NE

OBSERVATION DATA, SITE DIAGRAM



SUMMARY OF AVERAGE OPACITY

SET NUMBER	TIME		OPACITY	
	START	END	SUM	AVERAGE
1521	1527		405	16.88

DATE	STACK A				STACK B					
	HOUR	MINUTE	0	15	30	45	0	15	30	45
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		2	15	15	15	15				
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		57	15	15	15	15				
		58	15	15	15	15				
	1619	59	15	15	15	15				

APPENDIX B

**Fuel Oil Analysis and Graph of Heat Input vs.
Temperature**

FLORIDA POWER CORPORATION
CENTRAL CHEMICAL LABORATORY
15760 WEST POWERLINE STREET
CRYSTAL RIVER, FL 34428
TEL: 352-583-4463; EXT: 5239
MICROWAVE: 240-5239 MAC CN77

Higgins Unit (s):

Sample Date: 5/23/2003 Sample Number: FO-9220

Type of Fuel: No. 2 oil

Enter the type of Sample: Gas Turbine

RESULTS*

API Gravity @ 60°F:	35.1
%S:	0.38
Density (@ 60° F):	0.8489
Density (lb/gal):	7.0722

HHV, BTU/lb: 19,426 % ASH:

HHV, BTU/gal: 137,381 % Carbon: 87.4

HHV, BTU/bbl: 5,770,002 % Hydrogen: 12.9

LHV, BTU/lb: 18,331 % Nitrogen: 0.1

LHV, BTU/gal: 129,637 % Water:

LHV, BTU/bbl: 5,444,754

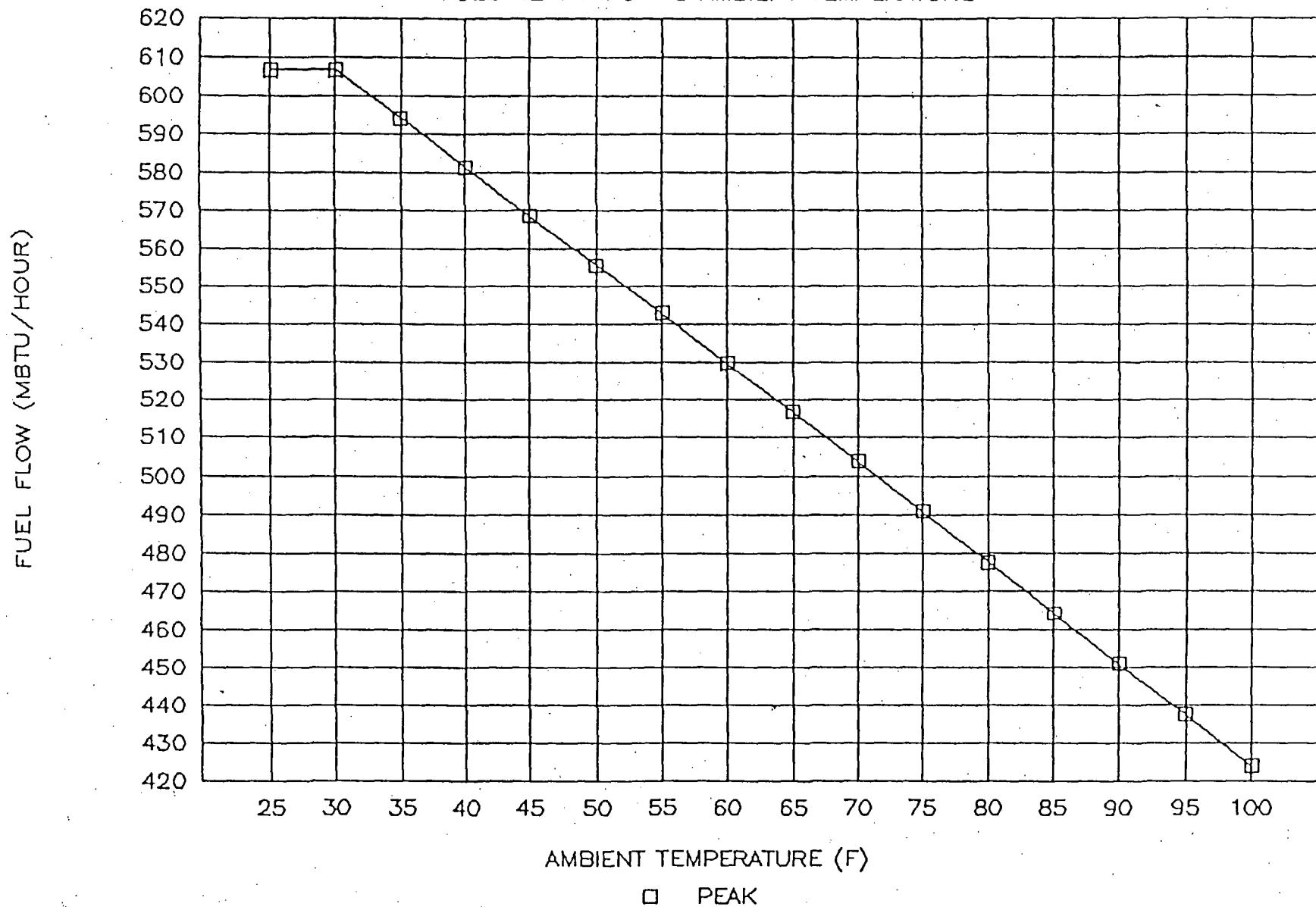
Sample Comment:

* Analysis performed by: TECO Labs

Jeff Smith
Chemist, Central Chem Lab

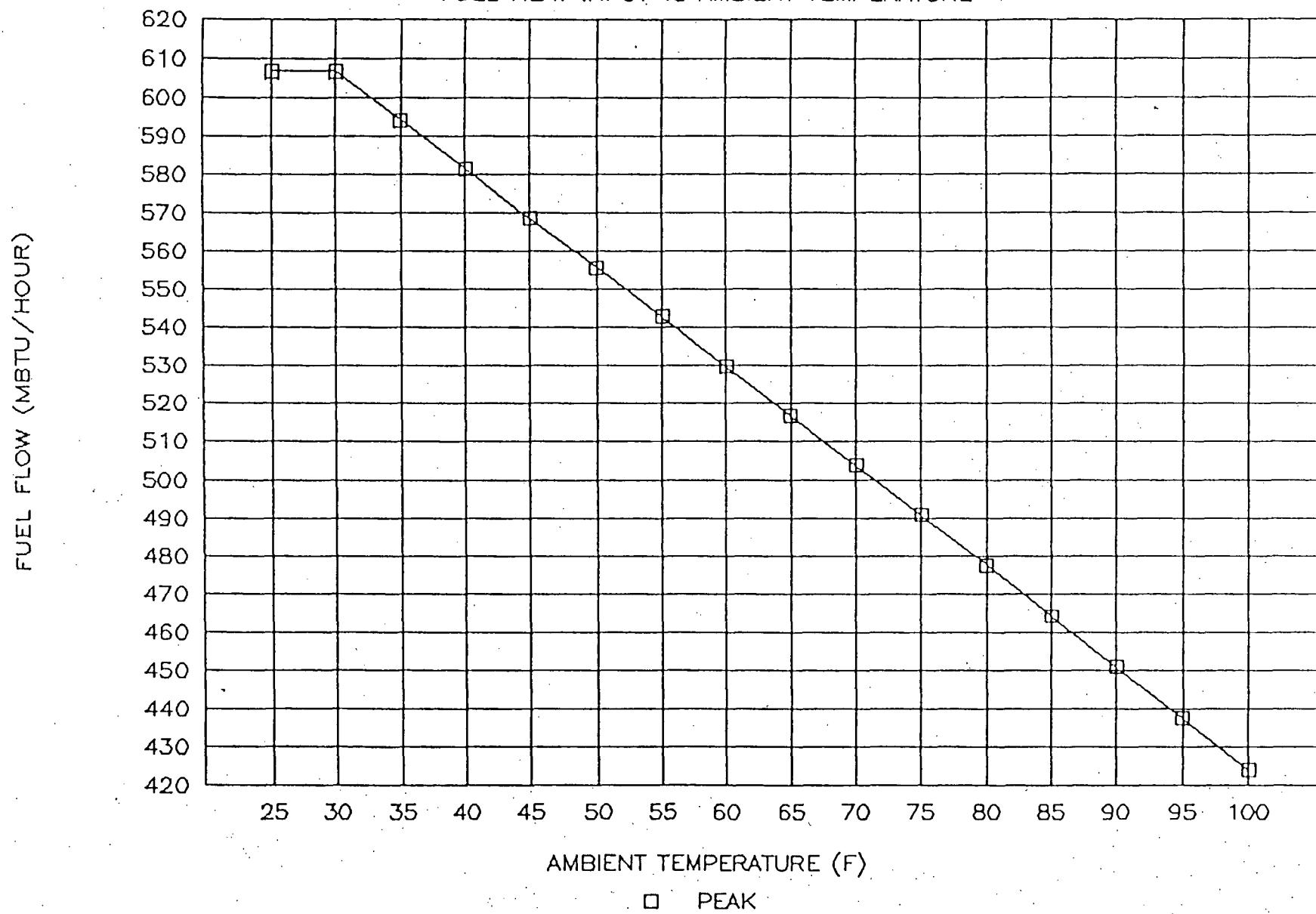
HIGGINS P1 COMBUSTION TURBINE

FUEL HEAT INPUT vs AMBIENT TEMPERATURE



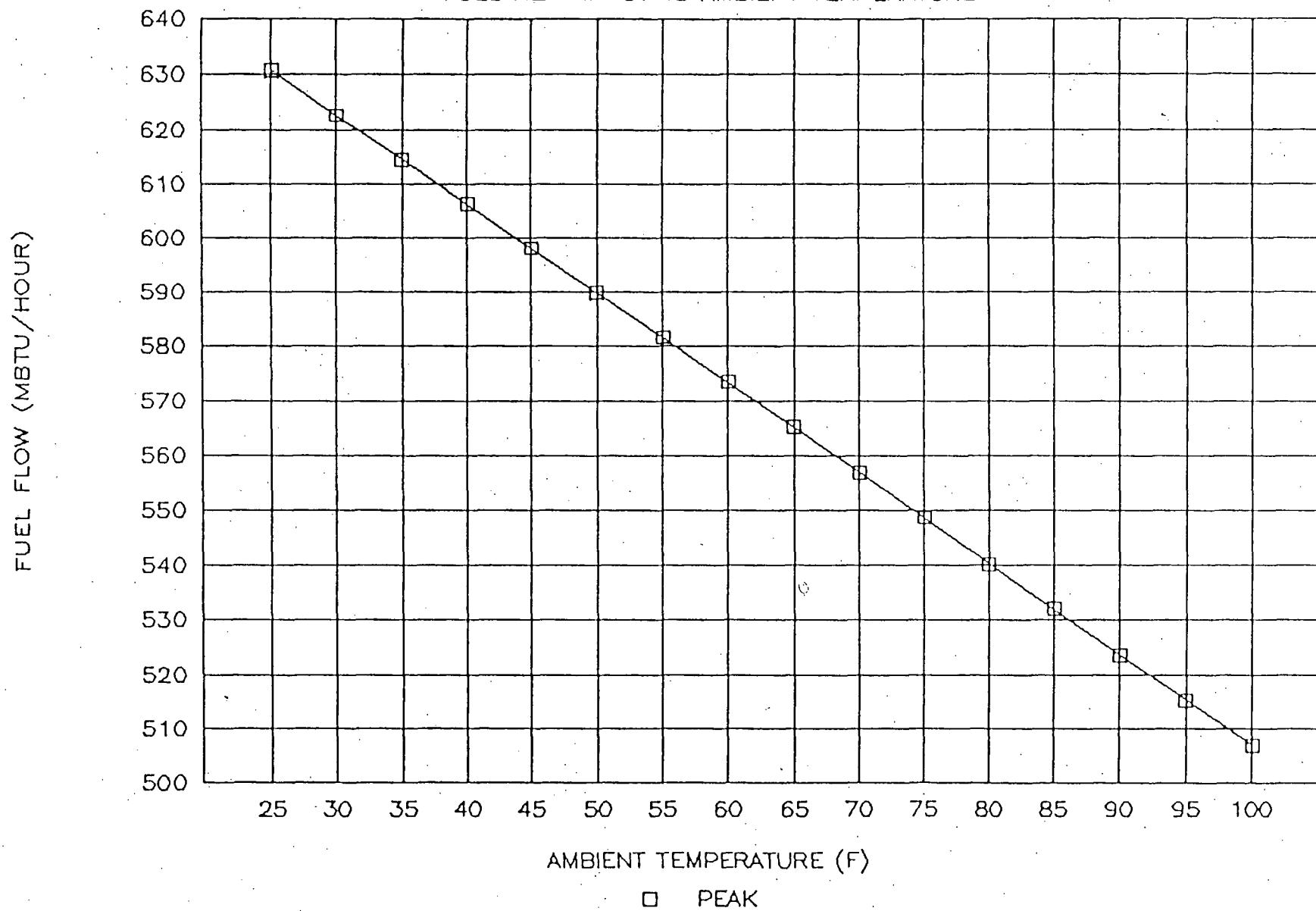
HIGGINS P2 COMBUSTION TURBINE

FUEL HEAT INPUT vs AMBIENT TEMPERATURE



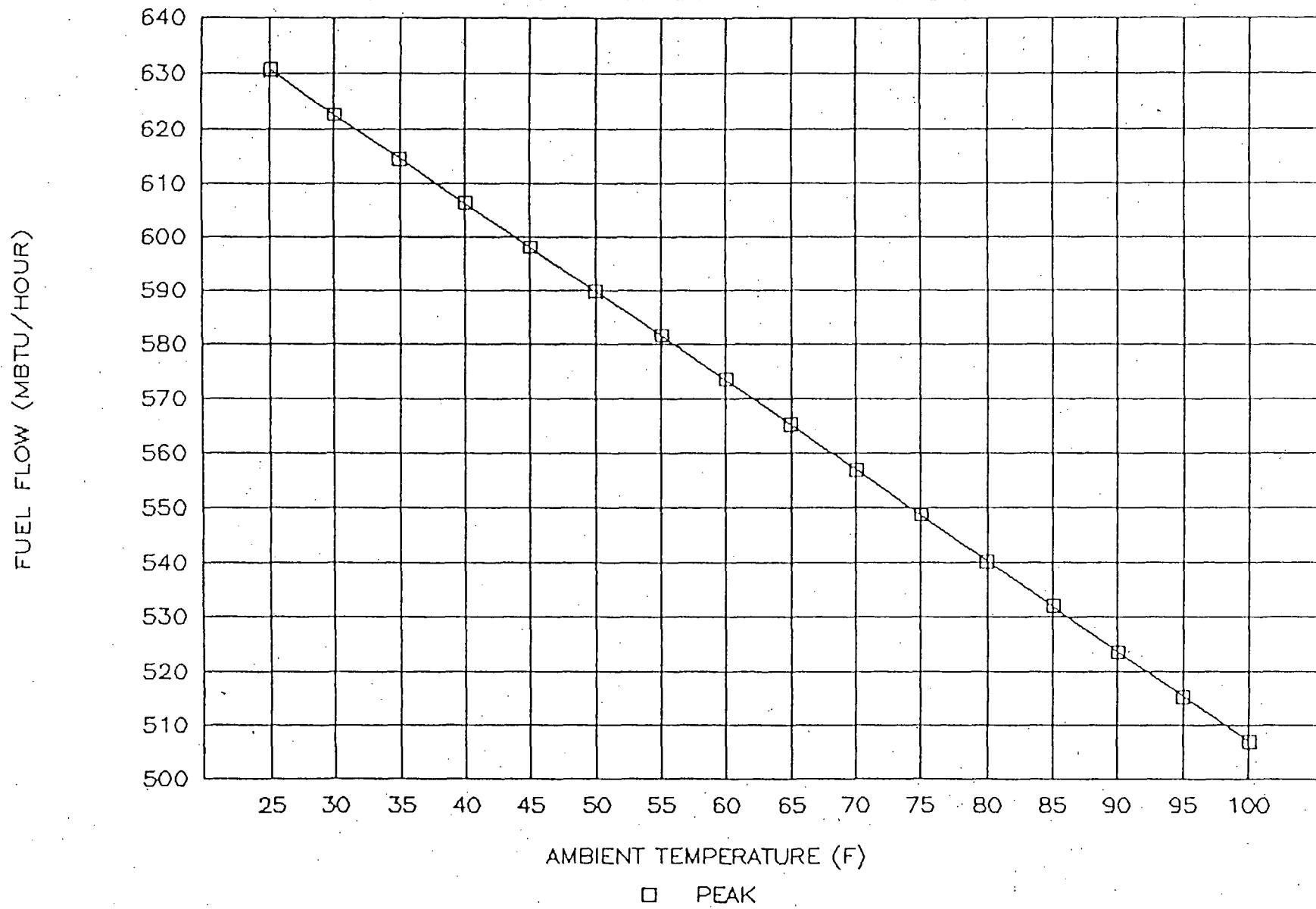
HIGGINS P3 COMBUSTION TURBINE

FUEL HEAT INPUT vs AMBIENT TEMPERATURE



HIGGINS P4 COMBUSTION TURBINE

FUEL HEAT INPUT vs AMBIENT TEMPERATURE



APPENDIX C

PROJECT PARTICIPANTS

Project Participants

Ms. Debbie Telemeco-Anders

VE Observer,
Environmental Technician
Progress Energy Corporation
Technical Services

Mr. Loyde Fry

VE Observer,
Environmental Technician
Progress Energy Corporation
Technical Services

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Debbie Telemeco Anders

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator.

Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

309490

Tampa, Florida

August 19, 2003

Certificate Number

Location

Date of Issue

Thomas Hore
President

Michael W. Jungsford
Director of Training

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Loyde Fry

met the specifications of Federal Reference Method 9
and qualified as a visible emissions evaluator.

Maximum deviation on white and black smoke did not
~~exceed~~ exceed 7.5% opacity and no single error exceeding
15% opacity was incurred during the certification test
conducted by Eastern Technical Associates of Raleigh,
North Carolina. This certificate is valid for six months
from date of issue.

309489

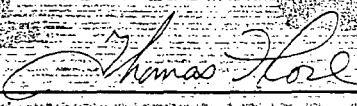
Certificate Number

Tampa, Florida

Location

August 20, 2003

Date of Issue

Thomas Koe


Michael W. Gansford


President

Director of Training