



GE ENERGY AND ENVIRONMENTAL RESEARCH CORPORATION

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Emission Test Report

FLORIDA POWER AND LIGHT COMPANY
MARTIN STATION POWER PLANT

Initial Compliance Demonstration for
Air Emissions Permit Limits on Units 8A and 8B
Combustion Turbine in the Simple Cycle Mode
Natural Gas Firing

Prepared for:

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EXECUTIVE SUMMARY

General Electric Energy and Environmental Research Corporation (GE EER) performed emission testing at the Florida Power and Light (FP&L) Company's Martin Station in Indiantown, Florida. Testing was performed to demonstrate compliance with conditions cited in FP&L's air emissions permit 0850001-008-AC issued by the Florida Department of Environmental Protection. The testing was completed at Unit 8A on May 7 and 8, and at Unit 8B on May 23 and 24, 2001.

These units are General Electric stationary, combustion turbines (PG7241FA, Frame 7FA) operated in the simple cycle mode. The Frame 7FA gas turbines operated on natural gas in the dry low NO_x (DLN) mode. These units are also equipped for water injection for NO_x control when firing distillate fuel oil. This report contains data for Units 8A and 8B testing when firing natural gas.

Testing was completed at four load conditions while the units fired natural gas. The parameters measured include carbon monoxide, nitrogen oxides, volatile organic compounds, flue gas moisture and flue gas volumetric flow rate (calculated). Particulate matter was measured during the full load test condition. Opacity, required by the permit, will be performed by FP&L at a later date under previous agreement with the regulatory agency and GE. The average results listed below demonstrate that actual emissions are below all applicable air emission permit limits:

Parameter	Nominal Operating Rate, approximate Percent of Full Load				
	100%	85%	65%	50%	Allowable
NO _x , ppmvd, @ 15% O ₂					
Unit 8A	7.8	6.6	6.7	6.0	9
Unit 8B	7.9	6.0	5.8	5.3	9
NO _x , lb/hr					
Unit 8A	50.9	--	--	--	66
Unit 8B	49.6	--	--	--	66
Particulate Matter ^a , lb/hr					
Unit 8A	2.71				9
Unit 8B	1.86				9
SO ₂ , % by Vol at 15% O ₂					
Unit 8A	0.000005				0.015
Unit 8B	0.000008				0.015
Sulfur, gr/std. cubic foot					
Unit 8A	0.001				1
Unit 8B	0.002				1
CO, ppmvd @ 15% O ₂					
Unit 8A	0.2				9
Unit 8B	0.2				9
CO, lb/hr					
Unit 8A	0.7				32
Unit 8B	0.6				32
VOCs, ppmvw					
Unit 8A	0.1 ^b				1.5
Unit 8B	0.1 ^b				1.5
VOCs, lb/hr					
Unit 8A	0.004				3.0
Unit 8B	0.003				3.0

^a - Front half particulate only.

^b - Value is below detection limit; instrument detection limit is reported.

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1.0 INTRODUCTION

The Florida Power and Light Company (FP&L) operates Martin Station Power Plant in Indiantown, Florida. This report summarizes the data collected during testing on Units 8A and 8B. Each unit is a simple cycle General Electric stationary combustion turbine (PG7241FA, Frame 7FA). The Frame 7FA gas turbines operated on natural gas in the dry low NO_x (DLN) mode during this testing. Each unit is also equipped with water injection for NO_x control when firing distillate oil. This report summarizes results for testing when firing natural gas. A separate report will be prepared for the oil-fired testing.

General Electric Energy and Environmental Research Corporation (GE EER) was contracted by General Electric Power Plant Systems Department (PPSD) at the direction of FP&L to perform the initial air permit compliance test demonstration.

1.1 Purpose and Objectives

The data collected during this testing will be used by General Electric to demonstrate compliance with air emission permit requirements.

Table 1-1 provides a matrix of parameters, load conditions and purposes of the testing.

TABLE 1-1. Test Matrix and Purpose of Testing

Parameter (both fuels)	Test EPA Method	Test Condition, percent of full load			
		100	85	65	50
NO _x	EPA M20	Guar / Permit	Guar / Permit	Guar / Permit	Guar / Permit
CO	EPA M10	Guar / Permit	Guar	Guar	Guar
VOC	EPA M25A	Guar / Permit	Guar	Guar	Guar
Moisture	EPA M4	Info	Info	Info	Info
TSP	EPA M5	Guar / Permit	--	--	--
O ₂	EPA M3A	Info	Info	Info	Info
CO ₂	EPA M3A	Info	Info	Info	Info
SO ₂	calculated	Permit	--	--	--
Sulfur	ASTM D 3246	Permit	--	--	--
Stack Flowrate	EPA M19 calc.	Info	Info	Info	Info

Three runs per load condition; VOC – volatile organic compounds; Guar – Emission guarantee; Permit – air permit requirement; Info – internal information or supporting other data requirements;

Natural gas sample collected during each test day and analyzed for composition (ultimate), specific gravity, heating value and sulfur.



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1.2 Test Program Organization

The primary contacts for the test program were:

FP&L Personnel

Carmine Peorie, FP&L Startup Coordinator, (561) 818-8644

GE EER Personnel

Michael White, test contractor manager, (919) 460-1060

John Maxwell, field team leader, (919) 460-1060

Desiree Jones, scheduling and data reduction, (949) 552-1803

Gary Folk, quality assurance, (919) 460-1060

1.3 Project Test Plan

GE EER followed the methodology and procedures cited in the document entitled "Air Emission Test Plan, Florida Power and Light Company, Martin Station Power Plant, Initial Compliance Demonstration for Emissions Guarantee and Air Emission Permit on Two Combustion Turbines" dated April 18, 2001.

There were no significant deviations from the Test Plan. There were no significant data quality problems encountered during this testing. The original test plan called for on-line GC sample and analysis for methane and ethane. The total hydrocarbons measurements never exceeded the minimum detection limit, therefore the methane/ethane analysis was not necessary.

1.4 Report Contents

The remainder of this Report is comprised of four Sections and Appendices. Section 2 contains a brief summary of the results in comparison to the compliance demonstration requirements. Section 3 provides a description of the procedures followed for the testing as specified in the Test Plan. Section 4 contains detailed summaries of emission testing results and associated quality control measures.

The Appendices contain all supporting documentation for the results presented in this report.



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CO	EPA M10	Guar / Permit	Guar	Guar	Guar
VOC	EPA M25A	Guar / Permit	Guar	Guar	Guar
Moisture	EPA M4	Info	Info	Info	Info
TSP	EPA M5	Guar / Permit	--	--	--
O ₂	EPA M3A	Info	Info	Info	Info
CO ₂	EPA M3A	Info	Info	Info	Info
SO ₂	calculated	Permit	--	--	--
Sulfur	ASTM D 3246	Permit	--	--	--
Stack Flowrate	EPA M19 calc.	Info	Info	Info	Info

Three runs per load condition; VOC – volatile organic compounds; Guar – Emission guarantee; Permit – air permit requirement; Info – internal information or supporting other data requirements;

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2.0 SUMMARY OF RESULTS

The emission tests for Units 8A and 8B were conducted under the conditions specified in the Emission Test Plan dated April 18, 2001 that was previously prepared by GE EER. There were no significant deviations from the standard test procedures set within the plan.

Results of three test runs are averaged and presented in Table 2-1 for comparison to the air permit emission limits. A more complete discussion of the results is provided in Section 4. All reported emissions are below the air permit limits.

Table 2-1. Summary of Results

Parameter	Nominal Operating Rate, approximate Percent of Full Load				Allowable
	100%	85%	65%	50%	
NOx, ppmvd, @ 15% O ₂					
Unit 8A	7.8	6.6	6.7	6.0	9
Unit 8B	7.9	6.0	5.8	5.3	9
NOx, lb/hr					
Unit 8A	50.9	--	--	--	66
Unit 8B	49.6	--	--	--	66
Particulate Matter ^a , lb/hr					
Unit 8A	2.71				9
Unit 8B	1.86				9
SO ₂ , % by Vol at 15% O ₂					
Unit 8A	0.000005				0.015
Unit 8B	0.000008				0.015
Sulfur, gr/std. cubic foot					
Unit 8A	0.001				1
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Unit 8A	0.2				9
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CO, lb/hr					
Unit 8A	0.7				32
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VOCs, ppmvw					
Unit 8A	0.1 ^b				1.5
Unit 8B	0.1 ^b				1.5
VOCs, lb/hr					
Unit 8A	0.004				3.0
Unit 8B	0.003				3.0

^a - Front half particulate only.

^b - Value is below detection limit; instrument detection limit is reported.

Opacity measurements, an additional air emission permit requirement, will be performed by FP&L at a later date under agreement with the state regulatory authority and General Electric.



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3.0 TEST PROGRAM DESCRIPTION

GE EER configured a sampling/monitoring strategy consistent with the requirements cited in FP&L's Air Construction Permit, the associated emission limits, NSPS standards and GE's air emission performance guarantees.

This subsection identifies the procedures that were followed to demonstrate compliance with the performance guarantees, as well as the air permit emission limits and 40 CFR Part 60 Subpart GG New Source Performance Standards (NSPS), as applicable. All compliance testing was completed in strict accordance with the methods, as applicable. Manual testing for particulate matter according to EPA Reference Method 5 was also included in this project.

Table 3-1 summarizes the monitoring procedures followed for the demonstration testing.

Table 3-1. Instrument Specifications

Analyte	Instrument/Principal	Range Specifications	Calibration Values
NO _x by EPA Method 20	TECO Model 42 C, Chemiluminescence	0-20 ppm	0, 6.0, 9.0, and 18.0
O ₂ by EPA Method 3A	Servomex 1400 Paramagnetic	0-25 percent	0, 12.0 and 21.0
CO ₂ by EPA Method 3A	ACS 3200 Infrared	0-10 percent	0, 5.0 and 8.0
CO by EPA Method 10	TECO Model 48 CTL NDIR w/GFC	0-20 ppm	0, 6.0, 10.0, and 18.0
VOCs by EPA Method 25A (for total unburned hydrocarbon)	California Analytical flame ionization detector (THC)	0-20 ppm for THC monitor	0, 6.0, 10.0 and 18.0 (THC monitor)

The procedures for the measurements during this program were primarily instrumentation techniques using continuous emission monitors. GE EER's continuous emission monitoring system (CEMS) is housed inside a mobile laboratory in the back of a 22-foot truck.

Sample gas extracted from the source being monitored was first cleaned and dried before analysis (except total hydrocarbons). The gas was conditioned by passing through a heated filter, a heat-traced Teflon line into a condenser-style moisture removal system prior to analysis for NO_x,



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CO₂, O₂ and CO. The conditioning system cools the gas to 35 °F and thereby condenses out most of the moisture in the sample. The system is operated with chilled condensers, which are continuously drained thereby minimizing the possibility of scrubbing target compounds. The flow rate is monitored and controlled through a series of valves and rotometers.

A separate system was used for the total hydrocarbon monitoring. The sample gas was transported directly to the analyzer (unconditioned) through a heat-traced Teflon sample line.

Calibrations were performed with EPA Protocol 1 gases. An Environics Series 2020 Computerized Emissions Monitoring Calibration System was used to dilute EPA Protocol 1 gases to the appropriate concentration. The gas dilution system was calibrated prior to the start of testing by comparing the response of the diluted gas to an appropriately ranged EPA Protocol 1 standard in accordance to EPA Method 205. These data are included in the Appendices with the Protocol 1 gas certifications.

Output from each analyzer was compiled on a microprocessor controlled data acquisition system. One-minute averages were recorded and translated to a computer spreadsheet for further data reduction. All data were printed on site and stored electronically including at least one backup file.

The following subsections provide brief descriptions of the EPA Reference Methods and any technical concerns encountered during the test program. This section also contains information on the fuel analysis and manual moisture measurements that were performed.

3.1 NO_x by EPA Method 20

A TECO Model 42C analyzer was used to measure NO_x. The operating principle of this instrument is a chemiluminiscent reaction in which ozone reacts with nitric oxide to form oxygen and nitrogen dioxide in an excited state. The excited NO₂ decays rapidly to the unexcited state, emitting a photon which is measured by a photomultiplier tube. The instrument measures total oxides of nitrogen (nitrogen oxide and nitrogen dioxide) by thermally converting nitrogen dioxide to nitrogen oxide in a separate reaction chamber prior to the multiplier tube.

Measurements were performed in accordance with 40 CFR Part 60, Appendix A, EPA Reference Method 20, *Determination of Nitrogen Oxides, Sulfur Dioxides and Diluent Emissions from Gas Turbines*. Three runs were completed at each of four load conditions.



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A stratification test was performed as part of the preliminary measurements. GE EER completed a 48-point stratification check measuring and reporting results for oxygen. GE EER then selected the eight monitoring points that reported the lowest oxygen concentrations as the points for monitoring during the compliance tests. EPA Method 20 requires that each point be sampled for a minimum of 1 minute plus response time of the NO_x analyzer. All CEMS instrumentation reported a response time of less than one minute. Each of the selected eight points were monitored for 3 minutes to yield a 24-minute run. Testing at Base Load conditions was 60-minutes in duration.

Quality control checks specified in EPA Method 20 were performed. These checks include converter efficiency checks, response time checks, system calibrations and bias checks. Vendor data was provided for interference response checks. These data are reported in Appendix A.

3.2 CO by EPA Method 10

A TECO Model 48CTL trace analyzer was used for the CO monitoring. With this system, concentrations are detected using the nondispersive infrared (NDIR) gas filter correlation technique. Radiation from the infrared source is chopped and then passed through a gas filter alternating between CO and nitrogen due to rotation of the filter wheel. The radiation then passes through an interference filter and enters a multiple pass optical cell where absorption by the sample gas occurs. The CO gas filter produces a reference beam that cannot be further attenuated by CO in the sample cell. At the same time, the nitrogen gas filter produces a measuring beam that can be absorbed by CO in the cell. The chopped detector signal is modulated by the alternation between the two gas filters. The sample amplitude is related to the concentrations of CO in the sample cell.

GE EER followed the requirements of 40 CFR Part 60, Appendix A, EPA Reference Method 10, *Determination of Carbon Monoxide Emissions from Stationary Sources*. Three runs were completed at the appropriate load conditions concurrent with the NO_x measurements.

3.3 CO₂ and O₂ by EPA Method 3A

A Servomex 1400 analyzer was used for the oxygen monitoring. With this system, concentrations are detected using the paramagnetic principle. The analyzer evaluates the paramagnetic susceptibility of the sample gas using a magnetodynamic measuring cell. The response voltage is proportional to the oxygen concentration ratio.

An ACS 3200 analyzer was used for the carbon dioxide monitoring. This analyzer emits a single beam of infrared radiation at dual wavelengths. The beam passes through a sample cell and



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radiation at the specific wavelengths is selectively absorbed by the carbon dioxide molecules. The intensity of radiation reaching the end of the sample cell is inversely proportional to the carbon dioxide concentration in the gas.

GE EER followed the requirements of 40 CFR Part 60, Appendix A, EPA Reference Method 3A, *Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources*. These measurements were made concurrently with all others (3 runs per test condition).

As a routine QC check on the oxygen and carbon dioxide results, GE EER calculated fuel factor (F_o) values using the equation (20.9- percent oxygen)/ percent carbon dioxide. This calculation is in accordance with the procedures outlined in EPA Method 3B (40CFR Part 60, Appendix A). The acceptable range for F_o when firing natural gas is between 1.600 and 1.836. All reported values fell within the acceptance range.

3.4 Total Hydrocarbons by EPA Method 25A

GE EER used a CAI Model 300 analyzer to perform these measurements. In this analyzer, the unconditioned (non-filtered, wet) flue gas enters the flame ionization detector (FID) and the hydrocarbons are combusted in a hydrogen flame. The ions and electrons formed enter an electrode gap, decrease the gas resistance, and permit a current flow in the external circuit. The resulting current is proportional to the instantaneous concentration of unburned hydrocarbons. The results were reported on a methane equivalent basis.

The system was calibrated with methane in air, EPA Protocol 1 gas. GE EER also performed bias checks to demonstrate that the probe and sample line did not contribute to the measured hydrocarbons. GE EER also documented ambient concentration measured by the system.

GE EER performed measurements for total hydrocarbons following 40 CFR Part 60, Appendix A, EPA Reference Method 25A *Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*. Three runs were performed during each of the appropriate test conditions.

The original test plan called for on-line GC sample and analysis for methane and ethane. The total hydrocarbons measurements never exceeded the minimum detection limit, therefore the methane/ethane analysis was not necessary.



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3.5 Sampling and Analysis of Fuels (Natural Gas)

Natural gas samples were collected on May 7, 8, 23 and 24, 2001. The samples were shipped to Core Laboratories of Houston, TX for BTU and specific gravity analysis. Fuel samples were analyzed according to the procedures outlined in Table 3-2.

Table 3-2. Fuel Analysis Procedures

Parameter	Procedure	Collection Frequency
Specific Gravity	ASTM D 3588	Two samples collected at each unit; one analysis performed per unit.
Sulfur	ASTM D 3246	
Heating Value	ASTM D 3588	

The data from the fuel gas sample analysis was used to calculate flue gas volumetric flow rate using procedures identified in EPA Reference Method 19.

3.6 Stack Gas Volumetric Flow by EPA Method 19

Stack gas volumetric flow rate was calculated using the procedures cited in EPA Method 19. This Method establishes F-factors, which relate to the gas volume of the combustion products to the heat content of the fuel. Data from the fuel analysis was used to calculate oxygen based and carbon dioxide based F-factors. The oxygen-based F-factor was used with the measured fuel feed rates, fuel heating value and oxygen content of the stack gas to calculate the total volumetric flow rate of the stack gas. The CO₂ F-factor, carbon content of the natural gas, along with the fuel feed rate, fuel heating value and carbon dioxide content was used also to calculate stack volumetric flow rate.

3.7 Total Suspended Particulate by EPA Method 5

TSP was measured according to EPA Method 5 requirements. A known volume of flue gas was extracted through a heated probe and filter into a series of preweighed/premeasured impingers. The particulate from the filter and probe rinse was measured to calculate the particulate concentration. The impinger catch was used for determination of flue gas moisture content. GE EER used a meter box console and all supporting EPA Method 5 equipment commercially manufactured by Apex Instruments.



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Methods 1 through 5. Each run was 180 minutes in duration. GE EER used all four ports available for testing the 20-foot diameter stack. A minimum of 100 dry standard cubic feet were collected for each run. Testing was performed from a minimum of 24 sample points. A schematic of the sample location and the points to be tested is provided in the Appendix to this document. All measurements on the schematic were verified prior to testing.

Specific modifications/enhancements/limitations applied for this method included:

- Sampling probe internal surfaces was made of chemically inert and non-catalytic material such as quartz.
- The filter material was quartz.
- Nozzle, probe and filter was heated to 248 to 273°F per EPA Method 5, *or at least 10°F higher than the dew point of sulfuric acid in the exhaust duct.*
- Probe wash was acetone per EPA Method 5.
- Cyclonic flow checks were performed during the equipment setup day.
- GE EER used high purity reagents (acetone and HPLC water) and Pallflex quartz filters.
- Analysis was performed by a subcontractor, Resolution Analytics, of Sanford, NC.
- EPA Method 2 was used for measurement of gas velocity in order to calculate the proper sampling rate to ensure collection of an isokinetic sample. All mass emission rates have been calculated using the volumetric flow rate data obtained from EPA Method 19 calculations.

3.8 Stack Gas Moisture by EPA Method 4

Moisture content was measured according to EPA Method 4 requirements. A known volume of flue gas was extracted through a series of preweighed/premeasured impingers (two impingers with water, one empty impinger and one silica gel impinger) to assess the mass of water collected. This mass, when compared against the known sample gas volume, was used to calculate flue gas moisture content. The flue gas moisture content was determined for each test condition. Three 30-minute runs were performed during each test condition concurrent with the CEMS measurements. This data was used to convert the measured hydrocarbon concentrations from a wet basis to a dry basis.



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3.9 Measurement of Ambient Conditions

GE EER took measurements of barometric pressure (on site aneroid barometer) and absolute humidity (battery operated psychrometer to provide dry bulb and wet bulb temperatures, °F). Measurement frequency was once per run during each condition.

3.10 Process Data

Facility personnel were responsible for collection of all pertinent process data. A hard copy of this data was printed on the Mark VI emission test data display screen at each load stabilization. Data was printed approximately every 10 minutes during the test runs. Process parameters of interest included:

- Mean turbine exhaust temperature (TTXM), °F
- Fuel flow (FQG) lb/sec (Natural Gas); FQLM1 (Distillate Oil)
- Compressor inlet temperature (CT1F1, CT1F2, CTIM), °F
- Specific Humidity (CMHUM), lb H₂O/lb dry air
- Generator Output (DWATT), MW
- Compressor discharge pressure (CPD), psig
- Inlet Guide Vane Angle (CSGV), degrees



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4.0 TEST RESULTS

4.1 Test Narrative

Air emission permit compliance testing was completed on May 7 and 8 for Unit 8A; and May 23 and 24, 2001 for Unit 8B. Preliminary measurements and some of the quality assurance checks were performed earlier in the same week as the compliance testing.

Testing was completed using CEMS procedures and manual test procedures (particulate). All reported results are supported with data contained in the Appendices to this document.

GE EER completed a stack traverse in accordance with EPA Method 20 requirements while the unit was operating near 50 percent of full load. A total of 48 points were monitored (12 points from each of 4 ports) for oxygen and carbon dioxide content to determine the presence of stratification. The traverse verified the absence of stratification in the stack for both Units.

During the test runs using the CEMS procedures, each sample point was monitored for three minutes at each of eight selected representative sample points to yield a total of 24 minutes per sample run. Test Runs during Base Load operation were 60-minutes in duration (except the particulate testing which was 180-minutes in duration). The sample periods are consistent with the Emission Test Plan and the requirements of EPA Reference Method 20.

Three runs were performed at each of four process operating conditions: nominally 50 percent, 65 percent, 85 percent and 100 percent of full load. Only GE air emission permit related parameters are reported in this document.

Table 4-1 summarizes test times and operating conditions.



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Table 4-1. Air Emission Permit Limit Compliance Test Sequence
Units 8A and 8B When Firing Natural Gas

Load	Run Number	Date/Time	Comment
<i>Unit 8A when firing natural gas</i>			
50% Load	Traverse	5/5/01, 2126-2308	approximately 85 MW
100% Load CEMS parameters	Run 1	5/7/01, 1725-1825	
	Run 2	5/7/01, 1910-2010	
	Run 3	5/7/01, 2050-2150	
100% Load particulate	Run 1	5/7/01, 1445-1756	
	Run 2	5/7/01, 1926-2233	
	Run 3	5/8/01, 0910-1222	
85% Load	Run 1	5/8/01, 1420-1444	
	Run 2	5/8/01, 1525-1549	
	Run 3	5/8/01, 1625-1649	
65% Load	Run 1	5/8/01, 1730-1754	
	Run 2	5/8/01, 1840-1904	
	Run 3	5/8/01, 1940-2004	
50% Load	Run 1	5/8/01, 2045-2109	
	Run 2	5/8/01, 2145-2209	
	Run 3	5/8/01, 2240-2304	
<i>Unit 8B when firing natural gas</i>			
50% Load	Traverse	5/23/01, 1050-1246	approximately 85 MW
100% Load CEMS parameters	Run 1	5/23/01, 1415-1515	
	Run 2	5/23/01, 1818-1918	
	Run 3	5/23/01, 1954-2054	
100% Load particulate	Run 1	5/23/01, 1416-1731	
	Run 2	5/23/01, 1854-2209	
	Run 3	5/23/01, 2244-0155	
85% Load	Run 1	5/24/01, 2220-2246	
	Run 2	5/24/01, 2329-2354	
	Run 3	5/25/01, 0025-0050	
65% Load	Run 1	5/24/01, 1845-1912	
	Run 2	5/24/01, 1955-2023	
	Run 3	5/24/01, 2110-2134	
50% Load	Run 1	5/24/01, 1520-1544	
	Run 2	5/24/01, 1631-1655	
	Run 3	5/24/01, 1735-1759	

Tables 4-2 through 4-5 summarize the results of the air emission testing on a per run basis for each operating load for Unit 8A. Tables 4-6 through 4-9 present the results for testing on Unit 8B.



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Table 4-2. Emission Summary Table for FP&L, Indiantown, FL - Unit 8A
Approximately 50% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	50	50	50	
Sampling Location	--	stack	stack	stack	
Date	--	08-May-01	08-May-01	08-May-01	
Test Time (start-stop)	--	2045-2109	2145-2209	2240-2304	
Ambient Conditions					
Barometric Pressure	In. Hg	30.09	30.10	30.08	30.09
Ambient Temperature (dry bulb)	°F	73	71	73	72.3
Wet Bulb Temperature	°F	66	61	64	63.7
Absolute Humidity	lb water/lb dry air	0.01206	0.00911	0.01068	0.01062
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1193.5	1194.5	1194.5	1194.2
Fuel Flow, FQG	lb/sec	13.67	13.63	13.64	13.65
Compressor Inlet Temperature, CTIM	°F	90.2	89.5	89.6	89.7
Specific Humidity, CMHUM	lb/lb	0.00975	0.00919	0.00912	0.00935
Inlet Guide Vane Angle, CSGV	degrees	50.2	50.0	49.8	50.0
Generator Output, DWATT	MW	83.0	82.4	82.3	82.6
Compressor Discharge Pressure, CPD	psig	132.6	132.2	131.4	132.0
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	489,880	486,970	488,780	488,540
Volumetric Flow, M-19, F _c	dscfm	482,630	483,530	482,730	482,960
Moisture	%V	7.9	10.2	6.0	8.0
O ₂	%	13.9	13.9	13.9	13.9
CO ₂	%	4.0	4.0	4.0	4.0
F _o Factor	--	1.730	1.744	1.734	1.736
NO _x	ppmvd	7.1	7.1	7.2	7.1
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	6.0	6.0	6.1	6.0



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Table 4-3. Emission Summary Table for FP&L, Indiantown, FL - Unit 8A
Approximately 65% Base Load Conditions on Natural Gas

Test Identification					Average
Test Period	--	1	2	3	
Test Condition	load level, %	65	65	65	
Sampling Location	--	stack	stack	stack	
Date	--	08-May-01	08-May-01	08-May-01	
Test Time (start-stop)	--	1730-1754	1840-1904	1940-2004	
Ambient Conditions					
Barometric Pressure	In. Hg	30.10	30.10	30.09	30.10
Ambient Temperature (dry bulb)	°F	78	77	75	76.7
Wet Bulb Temperature	°F	68	67	66	67.0
Absolute Humidity	lb water/lb dry air	0.01234	0.01179	0.01160	0.01191
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1171.8	1170.5	1169.2	1170.5
Fuel Flow, FQG	lb/sec	15.54	15.55	15.55	15.55
Compressor Inlet Temperature, CTIM	°F	84.6	81.8	80.5	82.3
Specific Humidity, CMHUM	lb/lb	0.00977	0.01063	0.01025	0.01022
Inlet Guide Vane Angle, CSGV	degrees	55.7	55.7	55.5	55.6
Generator Output, DWATT	mw	106.7	106.8	106.6	106.7
Compressor Discharge Pressure, CPD	psig	150.0	150.1	150.5	150.2
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	553,190	550,580	551,440	551,510
Volumetric Flow, M-19, F _c	dscfm	545,750	543,590	542,360	543,670
Moisture	%v	7.8	9.8	10.2	9.3
O ₂	%	13.8	13.8	13.8	13.8
CO ₂	%	4.1	4.1	4.1	4.1
F _o Factor	--	1.727	1.728	1.722	1.726
NO _x	ppmvd	8.1	8.0	8.0	8.0
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	6.8	6.6	6.6	6.7



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Table 4-4. Emission Summary Table for FP&L, Indiantown, FL - Unit 8A
Approximately 85% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	85	85	85	
Sampling Location	--	stack	stack	stack	
Date	--	08-May-01	08-May-01	08-May-01	
Test Time (start-stop)	--	1420-1444	1525-1549	1625-1649	
Ambient Conditions					
Barometric Pressure	In. Hg	30.03	30.06	30.08	30.06
Ambient Temperature (dry bulb)	°F	78	80	78	78.7
Wet Bulb Temperature	°F	68	68	67	67.7
Absolute Humidity	lb water/lb dry air	0.01234	0.01188	0.01154	0.01192
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1135.4	1135.2	1135.3	1135.3
Fuel Flow, FQG	lb/sec	18.48	18.45	18.51	18.48
Compressor Inlet Temperature, CTIM	°F	77.1	77.7	78.4	77.7
Specific Humidity, CMHUM	lb/lb	0.01026	0.00970	0.00999	0.00998
Inlet Guide Vane Angle, CSGV	degrees	66.6	66.8	67.0	66.8
Generator Output, DWATT	MW	139.3	139.5	139.8	139.5
Compressor Discharge Pressure, CPD	psig	180.3	180.6	180.7	180.5
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	647,330	643,690	649,490	646,840
Volumetric Flow, M-19, F _c	dscfm	633,520	634,130	633,220	633,620
Moisture	%V	10.6	7.0	9.6	9.0
O ₂	%	13.8	13.7	13.8	13.7
CO ₂	%	4.2	4.2	4.2	4.2
F _o Factor	--	1.719	1.730	1.712	1.720
NO _x	ppmvd	8.0	8.0	7.9	8.0
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	6.6	6.6	6.6	6.6



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Table 4-5. Emission Summary Table for FP&L, Indiantown, FL - Unit 8A
Approximately 100% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	100	100	100	
Sampling Location	--	stack	stack	stack	
Date	--	07-May-01	07-May-01	07-May-01	
Test Time (start-stop)	--	1725-1825	1910-2010	2050-2150	
Ambient Conditions					
Barometric Pressure	In. Hg	30.05	30.00	30.05	30.03
Ambient Temperature	°F	82	81	73	79
Wet Bulb Temperature	°F	67	71	69	69
Absolute Humidity	lb water/lb dry air	0.01063	0.01403	0.01433	0.01300
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1123.9	1119.6	1118.9	1120.8
Fuel Flow, FQG	lb/sec	21.323	21.631	21.721	21.558
Compressor Inlet Temperature, CTIM	°F	78.7	73.2	71.7	74.5
Specific Humidity, CMHUM	lb/lb	0.01313	0.01165	0.01157	0.01212
Inlet Guide Vane Angle, CSGV	degrees	88.0	88.0	88.0	88.0
Generator Output, DWATT	mw	166.9	170.1	171.1	169.4
Compressor Discharge Pressure, CPD	psig	210.7	213.3	213.9	212.6
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	739,830	747,400	745,360	744,200
Volumetric Flow, M-19, F _c	dscfm	729,386	729,410	732,440	730,412
Moisture	%V	8.0	7.1	6.2	7.1
O ₂	%	13.7	13.7	13.6	13.7
CO ₂	%	4.2	4.2	4.2	4.2
F _o Factor	--	1.731	1.714	1.726	1.724
NO _x	ppmvd	9.5	9.7	9.5	9.6
Exhaust Emissions					
Particulate Matter	lb/hr	3.37	2.65	2.12	2.71
CO	ppmvd	0.2	0.3	0.2	0.2
	lb/hr	0.6	0.9	0.6	0.7
VOC	ppmvw	< 0.1	< 0.1	< 0.1	< 0.1
	lb/hr	< 0.004	< 0.004	< 0.004	< 0.004
NO _x	ppmvd @ 15% O ₂	7.7	7.9	7.7	7.8
	lb/hr	50.1	52.0	50.7	50.9



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Table 4-6. Emission Summary Table for FP&L, Indiantown, FL - Unit 8B
Approximately 50% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	50	50	50	
Sampling Location	--	stack	stack	stack	
Date	--	24-May-01	24-May-01	24-May-01	
Test Time (start-stop)	--	1520-1544	1631-1655	1735-1759	
Ambient Conditions					
Barometric Pressure	In. Hg	29.61	29.90	29.59	29.70
Ambient Temperature (dry bulb)	°F	82	82	84	82.7
Wet Bulb Temperature	°F	76	76	74	75.3
Absolute Humidity	lb water/lb dry air	0.01789	0.01789	0.01570	0.01716
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1194.0	1193.4	1195.0	1194.2
Fuel Flow, FQG	lb/sec	13.47	13.52	13.48	13.49
Compressor Inlet Temperature, CTIM	°F	95.4	93.9	97.4	95.5
Specific Humidity, CMHUM	lb/lb	0.02676	0.01995	0.01676	0.02116
Inlet Guide Vane Angle, CSGV	degrees	51.6	51.6	51.8	51.6
Generator Output, DWATT	MW	84.5	84.8	84.6	84.6
Compressor Discharge Pressure, CPD	psig	133.5	133.7	133.6	133.6
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	487,210	492,589	486,273	488,691
Volumetric Flow, M-19, F _c	dscfm	477,825	478,423	478,287	478,178
Moisture	%V	10.7	13.3	9.9	11.3
O ₂	%	14.0	14.0	14.0	14.0
CO ₂	%	4.1	4.1	4.1	4.1
F _o Factor	--	1.706	1.690	1.711	1.702
NO _x	ppmvd	6.6	6.5	5.7	6.2
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	5.6	5.6	4.8	5.3



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Table 4-7. Emission Summary Table for FP&L, Indiantown, FL - Unit 8B
Approximately 65% Base Load Conditions on Natural Gas

Test Identification					Average
Test Period	--	1	2	3	
Test Condition	load level, %	65	65	65	
Sampling Location	--	stack	stack	stack	
Date	--	24-May-01	24-May-01	24-May-01	
Test Time (start-stop)	--	1845-1912	1955-2023	2110-2134	
Ambient Conditions					
Barometric Pressure	ln. Hg	29.61	29.62	29.64	29.62
Ambient Temperature (dry bulb)	°F	82	82	80	81.3
Wet Bulb Temperature	°F	73	73	73	73.0
Absolute Humidity	lb water/lb dry air	0.01540	0.01540	0.01586	0.01555
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1172.7	1170.2	1168.4	1170.4
Fuel Flow, FQG	lb/sec	15.16	15.27	15.32	15.25
Compressor Inlet Temperature, CTIM	°F	88.7	86.8	85.2	86.9
Specific Humidity, CMHUM	lb/lb	0.01526	0.01574	0.01568	0.01556
Inlet Guide Vane Angle, CSGV	degrees	56.8	57.0	57.3	57.0
Generator Output, DWATT	mw	106.0	107.4	107.9	107.1
Compressor Discharge Pressure, CPD	psig	150.3	151.4	152.2	151.3
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	539,151	542,292	542,374	541,272
Volumetric Flow, M-19, F _c	dscfm	528,808	532,645	532,945	531,466
Moisture	%v	8.9	9.7	9.3	9.3
O ₂	%	13.9	13.9	13.8	13.9
CO ₂	%	4.1	4.1	4.1	4.1
F _o Factor	--	1.706	1.709	1.709	1.708
NO _x	ppmvd	6.9	7.0	6.8	6.9
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	5.8	5.8	5.7	5.8



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Table 4-8. Emission Summary Table for FP&L, Indiantown, FL - Unit 8B
Approximately 85% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	85	85	85	
Sampling Location	--	stack	stack	stack	
Date	--	24-May-01	24-May-01	25-May-01	
Test Time (start-stop)	--	2220-2246	2329-2354	0025-0050	
Ambient Conditions					
Barometric Pressure	In. Hg	29.65	29.65	29.65	29.65
Ambient Temperature (dry bulb)	°F	77	76	76	76.3
Wet Bulb Temperature	°F	72	73	73	72.7
Absolute Humidity	lb water/lb dry air	0.01569	0.01683	0.01683	0.01645
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1133.0	1131.1	1131.6	1131.9
Fuel Flow, FQG	lb/sec	18.09	18.22	18.14	18.15
Compressor Inlet Temperature, CTIM	°F	76.9	75.5	76.1	76.2
Specific Humidity, CMHUM	lb/lb	0.01637	0.01687	0.01709	0.01678
Inlet Guide Vane Angle, CSGV	degrees	68.6	69.0	68.5	68.7
Generator Output, DWATT	MW	138.8	140.2	139.6	139.5
Compressor Discharge Pressure, CPD	psig	181.3	182.3	181.6	181.7
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	630,580	635,316	632,590	632,829
Volumetric Flow, M-19, F _c	dscfm	652,989	656,245	623,727	644,320
Moisture	%V	9.8	9.5	10.4	9.9
O ₂	%	13.7	13.7	13.7	13.7
CO ₂	%	4.0	4.0	4.2	4.1
F _o Factor	--	1.802	1.797	1.715	1.771
NO _x	ppmvd	7.4	7.2	7.3	7.3
Exhaust Emissions					
NO _x	ppmvd @ 15% O ₂	6.1	6.0	6.0	6.0



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Table 4-9. Emission Summary Table for FP&L, Indiantown, FL - Unit 8B
Approximately 100% Base Load Conditions on Natural Gas

Test Identification					
Test Period	--	1	2	3	Average
Test Condition	load level, %	100	100	100	
Sampling Location	--	stack	stack	stack	
Date	--	23-May-01	23-May-01	23-May-01	
Test Time (start-stop)	--	1415-1515	1818-1918	1954-2054	
Ambient Conditions					
Barometric Pressure	In. Hg	29.59	29.49	29.50	29.50
Ambient Temperature	°F	84	81	78	81
Wet Bulb Temperature	°F	79	77	75	77
Absolute Humidity	lb water/lb dry air	0.02027	0.01913	0.01803	0.01914
Turbine Operating Conditions					
Mean Turbine Exhaust Temp., TTXM	°F	1128.0	1127.7	1126.0	1127.2
Fuel Flow, FQG	lb/sec	20.51	20.51	20.66	20.56
Compressor Inlet Temperature, CTIM	°F	80.3	79.9	77.6	79.3
Specific Humidity, CMHUM	lb/lb	0.03485	0.03117	0.02614	0.03072
Inlet Guide Vane Angle, CSGV	degrees	88.0	88.0	88.0	88.0
Generator Output, DWATT	mw	162.2	162.6	163.9	162.9
Compressor Discharge Pressure, CPD	psig	206.4	206.5	207.6	206.8
Exhaust Gas Conditions					
Volumetric Flow, M-19, F _d	dscfm	702,224	712,239	717,384	710,616
Volumetric Flow, M-19, F _c	dscfm	701,582	701,840	690,471	697,965
Moisture	%V	10.1	9.7	8.6	9.5
O ₂	%	13.6	13.7	13.7	13.7
CO ₂	%	4.2	4.2	4.3	4.2
F _o Factor	--	1.738	1.714	1.674	1.709
NO _x	ppmvd	9.7	9.7	9.8	9.7
Exhaust Emissions					
Particulate Matter	lb/hr	1.73	1.78	2.07	1.86
CO	ppmvd	0.2	0.2	0.2	0.2
	lb/hr	0.7	0.5	0.7	0.6
VOC	ppmvw	< 0.1	< 0.1	< 0.1	< 0.1
	lb/hr	< 0.003	< 0.003	< 0.003	< 0.003
NO _x	ppmvd @ 15% O ₂	7.8	8.0	8.0	7.9
	lb/hr	48.9	49.6	50.2	49.6



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4.2 Quality Control Procedures and Results

Specific quality assurance and quality control (QA/QC) procedures were followed during this test program to ensure the production of useful and valid data. The QA/QC checks and procedures described in this section are an integral part of the overall sampling scheme. The acceptance criteria, control limits and corrective action that were followed are summarized in Table 4-10. All measurements were within cited control limits. Supporting documentation for each of these quality control measures are provided in the Appendices.

4.2.1 Continuous Emission Monitors Data Quality

Continuous monitoring for NO_x, CO, O₂, and CO₂ was performed using the instruments discussed in Section 3. Quality control procedures for all instruments are similar. The primary control check for precision of the continuous monitors was the analysis of control standards. The control standards were used to calibrate the instruments at the beginning and end of each day and to check instrument drift as required after each run. EPA Protocol 1 gases were used.

Calibration and Linearity Check

Analyzer calibration was performed at least once each test day. Analyzer response for NO_x, O₂, and CO₂ was set using the zero and mid-level calibration gases. Analyzer response for UHC and CO was set using the zero and high-level span gases. Subsequent response to the calibration gases were within the limits shown in Table 4-6.

Drift Checks

At the beginning and end of each test run, zero and upscale gases were introduced into the instruments as required by the reference methods. Drift for each test was determined using the results of the pre-test and post-test calibration checks.

Other QC Checks

Records of daily leak checks, sample line bias checks and response time checks were performed according to the specifications in the reference methods and listed in Table 3-1. Results of each of these checks are provided in Appendix A. A test of the NO₂ to NO conversion efficiency of the NO_x analyzer was performed using a calibration standard of NO₂ in nitrogen.



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Table 4-10. Quality Control Checks

Criteria	Control Limits	Corrective Action
Instrument Measurements: General		
Line Leak Check	<0.5% O ₂	Locate & repair leak, recheck
Manifold Leak Check	<0.5% O ₂	Locate & repair leak, recheck
Instrument Measurements: NO_x, O₂, and CO₂		
Calibration Error (low & high level)	±2.0% of span	Adjust instrument, recalibrate
Drift Between Runs (zero & mid-level)	±2.0% of span	Adjust data for drift
Response Time	Less than 30 seconds	Increase sample flow rate
NO ₂ to NO Conv. Efficiency	>90% conversion	Replace converter, recheck
Instrument Measurements: CO		
Calibration Error (low & mid-level)	±2.0% of full scale	Adjust instrument, recalibrate
Drift (zero, mid & high-level)	±10.0% of span in 8 hrs.	Adjust data for drift
Response time	Less than 30 seconds	Increase sample flow rate
Instrument Measurements: UHC		
Calibration Error (low & mid-level)	±5.0% of gas value	Adjust instrument, recalibrate
Drift Between Runs (zero & mid-level)	±3.0% of span	Adjust data for drift
Response Time	None	Record response time
Manual Sampling		
Final Leak Rate	≤0.02 acfm or 4% of sampling rate whichever is less	Adjust sample volume
Dry Gas Meter Calibration	Post average factor (g) agree ±5% of pre-factor	Adjust sample volumes using the g that gives smallest volume
Indiv. Correction Factors (Y _i)	Agree within 2% of average factor	Redo correction factor
Average Correction Factor	1.00 ±1%	Adjust the dry gas meter and recalibrate
Intermediate Dry Gas Meter	Calibrated every 6 months against EPA standard	--



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4.2.2 Quality Control Procedures for Manual Sampling

Gas Sample Volume Determination (by EPA Methods 4 and 5)

The raw volume indicated by the dry gas meter was corrected to a standard volume, using measurements of the actual meter pressure and temperature and the meter calibration factor. The meter calibration factor was established prior to the test using a qualified standard calibration meter. Pre-test and post-test leak checks were performed to ensure no leakage of ambient air into the system thereby biasing the stack gas sample volume determination. Final calibration was calculated in accordance to Section 9.2.2.1 of EPA Reference Method 5.

Moisture Determination QA/QC

The moisture content of the gas stream was determined using EPA Method 4. The moisture value was used to correct the wet UHC and VOC measurements to a dry basis. In order to assure good moisture data, several quality control procedures were followed. The balance used for weighing impingers was electronically checked for accuracy and with standard calibration weights periodically. The indicating silica gel in the moisture trains was checked for saturation after each run and changed if necessary. The impinger exit gas temperature was monitored during the run, and sufficient ice was maintained in the impinger bucket to keep the temperature lower than 68°F.

Sample Custody Procedures

Custody procedures for fuel samples included careful documentation of sample collection, and the use of chain-of-custody records for sample transportation. The sample containers were each tagged with a unique sample identification number. This number appeared on the chain-of-custody records, and was carried through the laboratory to appear on the final analytical reports. The Field Team Leader was responsible for ensuring that proper custody and documentation procedures are followed for sampling and analysis.

Data gathered at the sampling locations, including sampling times and any special conditions associated with specific samples, was recorded in the test log. Prepared data sheets were used to record ambient data. Required sampling intervals and actual sampling times were clearly noted on the data sheets. Electronically recorded data was downloaded daily from the computer hard drive to floppy disks for backup.



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4.2.3 Data Reduction, Validation, and Reporting

All data and calculations for flow rates and moisture concentrations were made using a computer spreadsheet. Calculated data was validated by an independent check. A predetermined input data set with known expected output values was entered to each spreadsheet to confirm proper function. All hand calculations were spot checked for accuracy and completeness on-site by the Field Engineer.

All measurement data were validated based on the following criteria:

- Stable process conditions during sampling and testing;
- Acceptable sample collection procedures;
- Consistency with other expected results; and
- Adherence to prescribed QC procedures.

Appendix A

**Unit 8A
CEMS Data**

Method 20 Oxygen Traverse

Method 20
O2 Traverse

Plant/City: FPL/Ft. Martin Date: 5-May-01
 Location: Unit 8A Time: 21:26-23:08
 Operators: J Maxwell D Ritchie Load 85 MW

Port #	Traverse Point	Sampling Time (hhmm)	O2 (%)	CO2 (%)	Temp Deg. F	COMMENTS
A	12	21:26	13.98	4.06	1189	
A	11	28	13.98	4.06	1190	
A	10	30	13.98	4.07	1188	
A	9	32	13.98	4.07	1189	
A	8	34	13.98	4.07	1189	BP 30.03
A	7	36	13.98	4.07	1190	WB 74F
A	6	38	13.97	4.08	1190	DB 86F
A	5	40	13.97	4.08	1185	RH 55%
A	4	42	14.05	4.03	1186	
A	3	44	13.99	4.07	1180	
A	2	46	14.01	4.05	1180	
A	1	48	14.01	0.12	1183	
B	12	21:52	13.99	4.04	1194	PORT CHANGE
B	11	54	13.96	4.04	1195	
B	10	56	13.99	4.09	1196	
B	9	58	13.96	4.1	1193	
B	8	22:00	13.95	4.1	1190	
B	7	2	13.95	4.11	1188	
B	6	4	13.95	4.11	1188	
B	5	6	13.97	4.1	1190	
B	4	8	14	4.11	1187	
B	3	10	14	4.12	1186	
B	2	12	14.01	4.12	1188	
B	1	14	14	4.12	1185	PORT CHANGE
C	12	22:20	14	4.11	1180	
C	11	22	14.02	4.11	1187	
C	10	24	14.01	4.13	1188	
C	9	26	14	4.13	1186	
C	8	28	13.99	4.13	1187	
C	7	30	13.99	4.13	1188	
C	6	32	13.99	4.14	1185	
C	5	34	14	4.13	1185	
C	4	36	14	4.14	1187	
C	3	0:00	14	4.14	1187	
C	2	40	14	4.14	1185	
C	1	42	14	4.14	1180	PORT CHANGE
D	12	22:46	14.01	4.14	1186	
D	11	48	14.01	4.13	1188	
D	10	50	14.01	4.13	1189	
D	9	52	14.01	4.14	1188	
D	8	54	14.01	4.13	1188	
D	7	56	14.01	4.14	1187	
D	6	58	14.01	4.14	1185	
D	5	23:00	14.01	4.14	1186	
D	4	2	14.02	4.14	1180	
D	3	4	14.02	4.13	1180	
D	2	6	14	4.14	1180	
D	1	8	14	4.13	1180	
Average			14.01	4.13	1180.00	
Max			14.05	4.14	1196.00	
Min			13.99	4.02	1186.69	

GE-Energy & Environmental Research

Direct Cal 5-5-01

15 sec Averaged data

For 5-05-2001 @ 14:44:02.59

O2	CO2	NOx	CO	TIME
Percent	Percent	ppmv	ppm	HH:MM:SS
-0.05	-0.01	-0.01		0.29 00:14:44:02.004
-0.02	-0.01	-0.01		0.22 00:14:44:17.004
0	-0.01	-0.01		0.17 00:14:44:32.004
0	-0.01	-0.01		0.16 00:14:44:47.004
0	-0.01	-0.01		0.17 Zero
0	-0.01	-0.01		0.16 00:14:45:17.004
-0.01	-0.01	-0.01		0.16 00:14:45:32.004
0.92	-0.01	-0.01		0.16 00:14:45:47.004
19.21	-0.01	0.64		2.04 00:14:46:02.004
20.82	-0.01	1.32		7.64 00:14:46:17.004
20.84	-0.01	0.33		8.59 00:14:46:32.004
20.85	-0.01	0.02		7.91 00:14:46:47.004
20.91	-0.01	-0.01		5.88 00:14:47:02.004
21	-0.01	-0.01		3.21 O2 High
20.99	-0.01	-0.01		1.34 00:14:47:32.004
20.99	-0.01	-0.01		0.38 00:14:47:47.004
20.99	-0.01	-0.01		0.06 00:14:48:02.004
20.99	-0.01	0		-0.02 00:14:48:17.004
20.98	-0.01	-0.01		-0.02 00:14:48:32.004
19.45	-0.01	-0.01		-0.02 00:14:48:47.004
12.19	-0.01	0	0	CO Zero
12	-0.01	0.01		0.07 00:14:49:17.004
12	-0.01	-0.01		0.09 O2 Mid
12	-0.01	-0.01		0.1 00:14:49:47.004
12	-0.01	-0.01		0.09 00:14:50:02.004
12	-0.01	0		0.06 00:14:50:17.004
11.89	-0.01	-0.01		0.05 00:14:50:32.004
3.21	6.23	-0.01		0.05 00:14:50:47.004
0.04	7.88	0.02		0.09 00:14:51:02.004
0.01	7.88	0.03		0.04 00:14:51:17.004
0	7.97	0.01		-0.01 00:14:51:32.004
-0.01	8	0.01		-0.09 CO2 High
-0.01	8.01	0.01		-0.2 00:14:52:02.004
-0.02	8	0.01		-0.27 00:14:52:17.004
-0.01	6.42	0.01		-0.32 00:14:52:32.004
-0.01	5	0.01		-0.35 00:14:52:47.004
-0.01	4.99	0.01		-0.34 00:14:53:02.004
-0.01	4.99	0.01		-0.33 00:14:53:17.004
-0.01	4.97	-0.01		-0.32 00:14:53:32.004
-0.01	4.99	-0.01		-0.29 CO2 Mid
-0.02	4.66	0		-0.28 00:14:54:02.004
0.06	0.67	0.53		-0.27 00:14:54:17.004
0.02	0.03	2.93		-0.23 00:14:54:32.004

0.01	0.01	11.45	-0.18	00:14:54:47.004
0	0.01	18.76	-0.13	00:14:55:02.004
0	0	18.87	-0.08	00:14:55:17.004
0	0	18.63	-0.04	00:14:55:32.004
0	0	18.38	0	00:14:55:47.004
0.01	0	18.21	0.03	00:14:56:02.004
0	0	18.15	0.02	00:14:56:17.004
0	-0.01	18.12	0.03	00:14:56:32.004
0	-0.01	18.11	0.04	00:14:56:47.004
0	-0.01	18.13	0.04	00:14:57:02.004
0	0	18	0.04	NOx High
0	0	18.02	0.04	00:14:57:32.004
-0.02	0	18.01	0.04	00:14:57:47.004
0	0.01	18.2	0.04	00:14:58:02.004
0	-0.01	18.18	0.06	00:14:58:17.004
0	-0.01	12.55	0.11	00:14:58:32.004
0	-0.01	10.05	0.13	00:14:58:47.004
-0.02	-0.01	10.05	0.12	NOx Mid
0	-0.01	9.68	0.11	00:14:59:17.004
-0.01	-0.01	8.47	0.1	00:14:59:32.004
-0.01	-0.01	7.31	0.1	00:14:59:47.004
-0.01	-0.01	6.07	0.1	00:15:00:02.004
0	-0.01	6.03	0.1	00:15:00:17.004
0	-0.01	6.03	0.1	00:15:00:32.004
0	-0.01	6.05	0.08	NOx Low
-0.01	-0.01	6.05	0.08	00:15:01:02.004
0	-0.01	6.05	0.08	00:15:01:17.004
-0.03	-0.01	6.04	0.08	00:15:01:32.004
0.57	0	6.28	0.07	00:15:01:47.004
0.09	0	5.01	0.08	00:15:02:02.004
0.06	0.02	2.2	1.06	00:15:02:17.004
0.05	0	0.6	3.12	00:15:02:32.004
0.08	-0.01	0.8	4.9	00:15:02:47.004
0.07	-0.01	0.84	7.23	00:15:03:02.004
0.05	-0.01	0.29	10.03	00:15:03:17.004
0.04	-0.01	0.12	12.32	00:15:03:32.004
0.03	-0.01	0.09	14.42	00:15:03:47.004
0.04	-0.01	0.08	15.95	00:15:04:02.004
0.04	-0.01	0.08	16.85	00:15:04:17.004
0.04	-0.01	0.06	17.3	00:15:04:32.004
0.05	-0.01	0.05	17.51	00:15:04:47.004
0.04	-0.01	0.05	17.63	00:15:05:02.004
0.04	-0.01	0.06	17.67	00:15:05:17.004
0.05	0	0.03	17.69	00:15:05:32.004
0.05	0	0.03	17.72	00:15:05:47.004
0.05	0	0.03	17.74	00:15:06:02.004
0.05	-0.01	0.03	17.77	00:15:06:17.004
0.05	0	0.03	17.77	00:15:06:32.004
0.04	0	0.04	17.8	00:15:06:47.004

0.05	0	0.03	17.83 00:15:07:02.004
0.04	0	0.03	17.81 00:15:07:17.004
0.04	0	0.03	17.81 00:15:07:32.004
0.05	0	0.04	17.83 00:15:07:47.004
0.04	0	0.03	17.83 00:15:08:02.004
0.05	-0.01	0.01	17.83 00:15:08:17.004
0.05	-0.01	0.01	17.84 00:15:08:32.004
0.05	-0.01	0.01	18 CO High
0.04	-0.01	0.01	18.02 00:15:09:02.004
0.04	-0.01	0.01	17.99 00:15:09:17.004
0.03	-0.01	0.02	18 00:15:09:32.004
0.03	-0.01	0.01	17.88 00:15:09:47.004
0.05	0	0.04	17.62 00:15:10:02.004
0.04	0	0.03	16.66 00:15:10:17.004
0.04	0	0.03	15 00:15:10:32.004
0.03	-0.01	0.01	13.05 00:15:10:47.004
0.03	-0.01	0.01	11.6 00:15:11:02.004
0.03	-0.01	0.02	10.56 00:15:11:17.004
0.03	-0.01	0.01	10.18 00:15:11:32.004
0.03	-0.01	0.01	10.05 00:15:11:47.004
0.02	-0.01	0.01	10.01 00:15:12:02.004
0.02	-0.01	0.01	10 CO Mid
0.03	-0.01	0.01	10.01 00:15:12:32.004
0.01	-0.01	0.01	10.01 00:15:12:47.004
0.03	-0.01	0.01	10.08 00:15:13:02.004
0.02	-0.01	0.01	9.69 00:15:13:17.004
0.02	-0.01	0.01	8.95 00:15:13:32.004
0.02	-0.01	0.01	7.97 00:15:13:47.004
0.01	-0.01	0.01	7.17 00:15:14:02.004
0.01	-0.01	0.01	6.52 00:15:14:17.004
0.01	-0.01	0.01	6.22 00:15:14:32.004
0.01	-0.01	0.01	6.12 00:15:14:47.004
0.01	-0.01	0.01	6.1 00:15:15:02.004
0.01	-0.01	0.01	6.08 00:15:15:17.004
0.01	-0.01	0.01	6.08 CO Low
0.01	-0.01	0.01	6.08 00:15:15:47.004

GE-Energy & Environmental Research

O2 Traverse

15 sec Averaged data

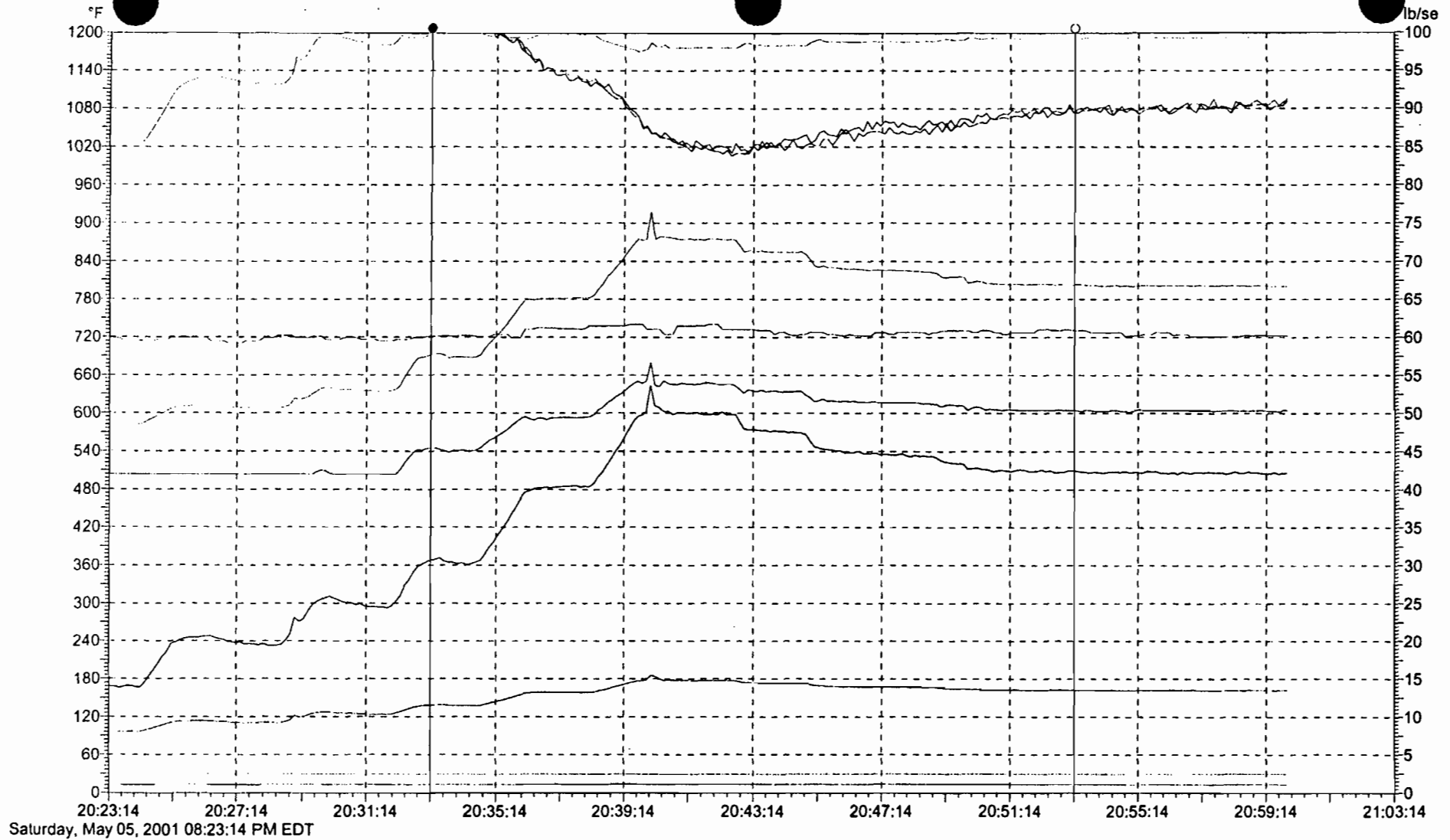
For 5-05-2001 @ 21:26:16.24

O2 Percent	CO2 Percent	TIME HH:MM:SS
13.98	4.06	00:21:26:46.000
13.98	4.06	00:21:28:31.000
13.98	4.07	00:21:30:16.000
13.98	4.07	00:21:32:31.000
13.98	4.07	00:21:34:31.000
13.98	4.07	00:21:36:31.000
13.97	4.08	00:21:38:31.000
13.97	4.08	00:21:40:31.000
14.05	4.03	00:21:42:01.000
13.99	4.07	00:21:44:46.000
14.01	4.05	00:21:46:46.000
14.01	0.12	00:21:48:31.000
13.99	4.04	00:21:52:46.000
13.96	4.04	00:21:54:46.000
13.99	4.09	00:21:56:31.000
13.96	4.1	00:21:58:46.000
13.95	4.1	00:22:00:16.000
13.95	4.11	00:22:02:46.000
13.95	4.11	00:22:04:16.000
13.97	4.1	00:22:06:31.000
14	4.11	00:22:08:46.000
14	4.12	00:22:10:31.000
14.01	4.12	00:22:12:31.000
14	4.12	00:22:14:31.000
14	4.11	00:22:16:31.000
14.02	4.11	00:22:20:31.000
14.01	4.13	00:22:22:31.000
14	4.13	00:22:24:46.000
13.99	4.13	00:22:26:31.000
13.99	4.13	00:22:28:46.000
13.99	4.14	00:22:30:16.000
14	4.13	00:22:32:31.000
14	4.14	00:22:34:46.000
14	4.14	00:22:36:46.000
14	4.14	00:22:38:46.000
14	4.14	00:22:40:46.000
14.01	4.14	00:22:42:46.000
14.01	4.13	00:22:46:31.000
14.01	4.13	00:22:48:46.000
14.01	4.14	00:22:50:46.008
14.01	4.13	00:22:52:46.008
14.01	4.14	00:22:54:46.008
14.01	4.14	00:22:56:46.008

14.01	4.14 00:22:58:31.008
14.02	4.14 00:23:00:16.008
14.02	4.13 00:23:02:46.008
14	4.14 00:23:04:46.008
14	4.13 00:23:06:46.008
14.01	4.13 00:23:08:31.008

BEST AVAILABLE COPY

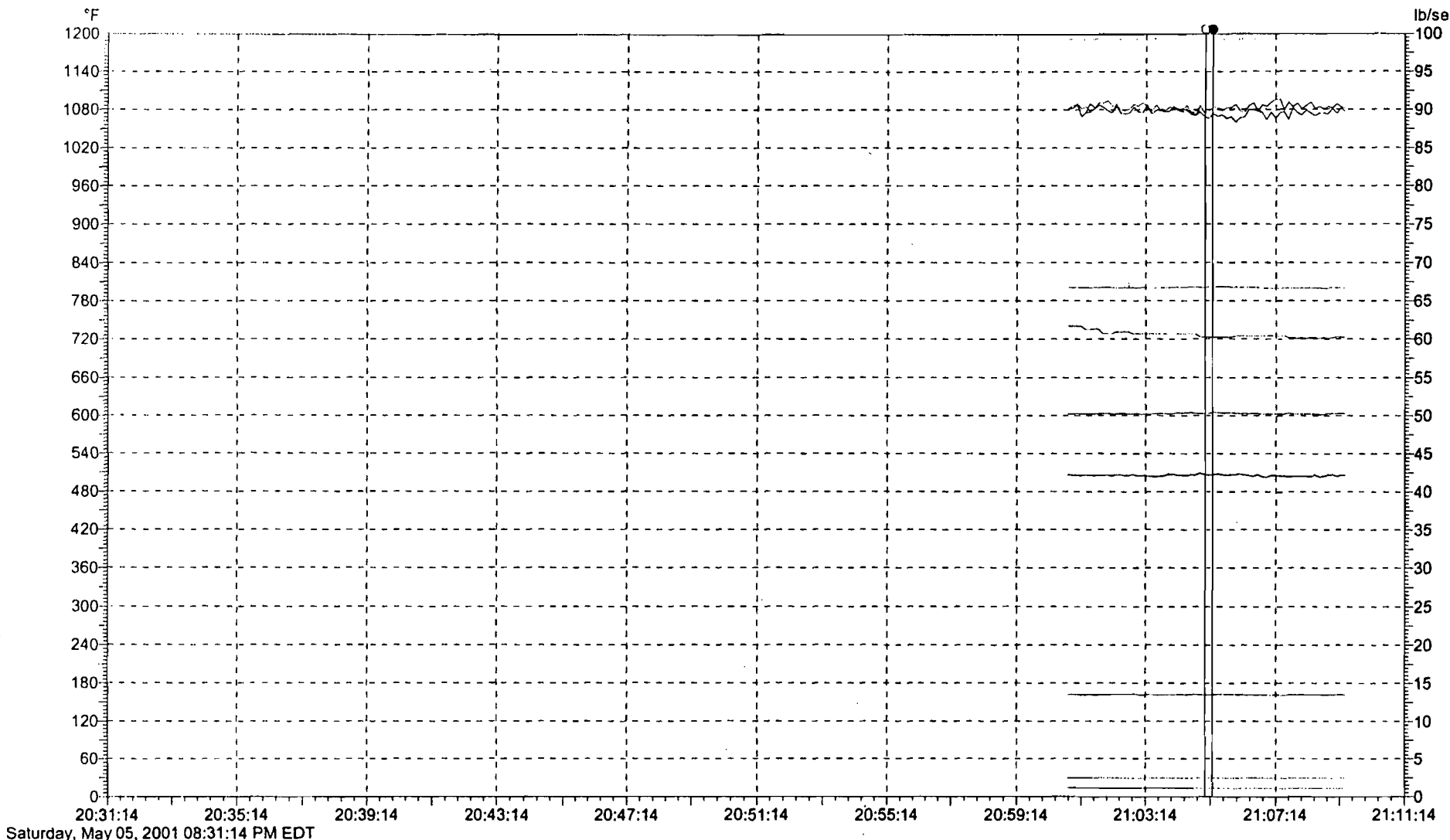
performance.trn - Event 5 of 6 - Printed 05/05/01 09:00:23 PM



Left Cursor 05/05/01 08:33:14 PM.149 - Right Cursor 05/05/01 08:53:14 PM.149 - Difference 1200 seconds

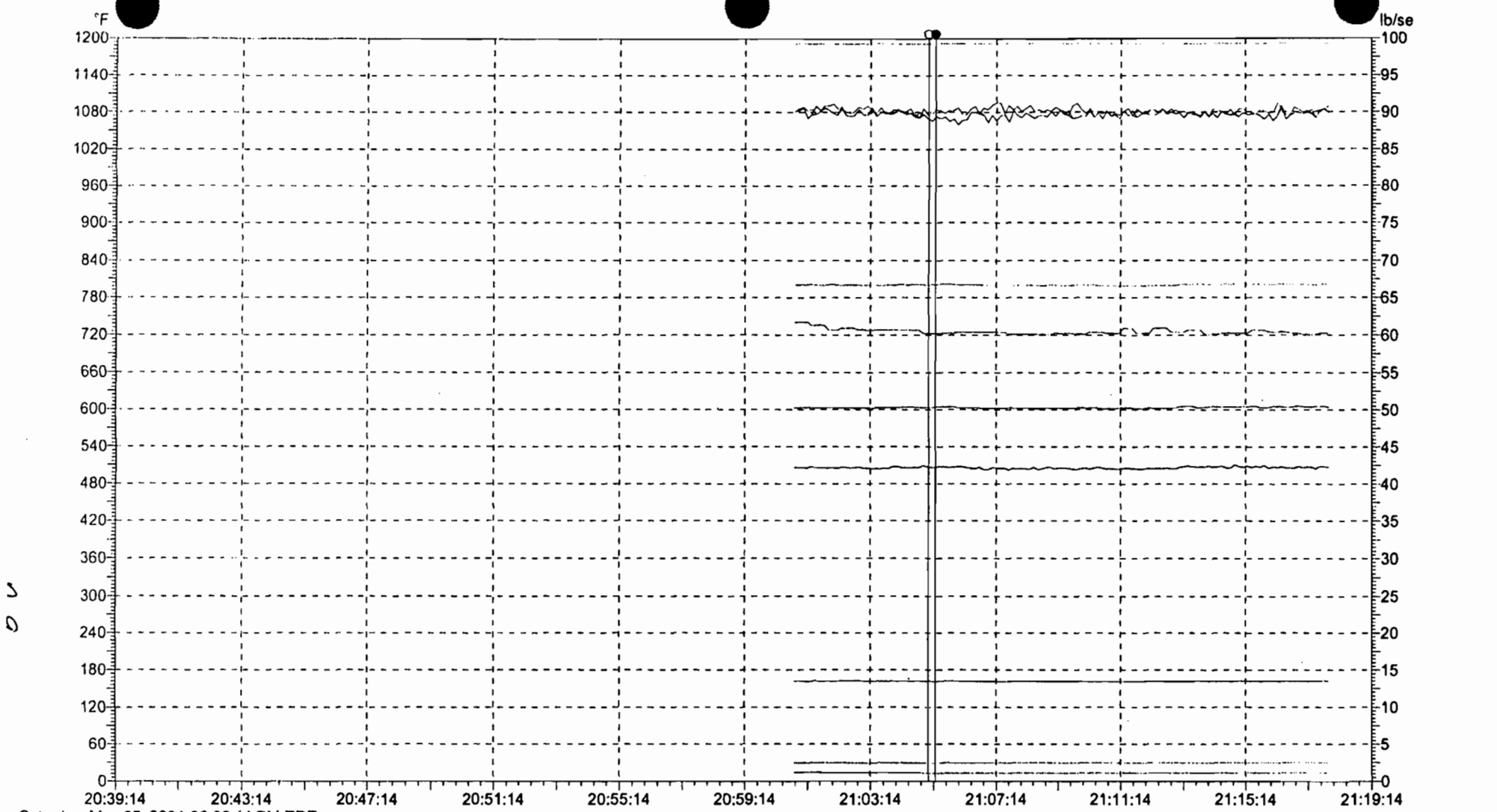
Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	G8A\TTXM	1196.88*	1191.47	°F	Exhaust Temp Median Corrected By Average	0	1200
>	G8A\fgg	11.5392*	13.5557	lb/se	Gas Fuel Flow	0	100
	G8A\FQLM1	0*	0	lb/se	Liquid Fuel Mass Flow	0	100
	G8A\ctif1a	101.37*	89.5465	°F	Compressor Inlet Thermocouple 1A	0	100
	G8A\ctif1b	101.222*	89.523	°F	Compressor Inlet Thermocouple 1B	0	100
	G8A\CTIM	101.222*	89.3581	°F	Compressor Inlet Temperature	0	100
	G8A\CMHUM	0.0110921*	0.0114469	#H/#A	Specific Humidity	0	1
	G8A\DWATT	61.5129*	85.0146	MW	Generator Watts Max Selected	0	200
	G8A\cpd	115.498*	133.908	psia	Compressor Discharge Press Max Select	0	200
	G8A\csgv	45.4397*	50.3892	DGA	IGV angle in deg	0	100
	G8A\WQ	2.47092*	2.47269	lb/se	Water Injection Flow from Feedback	0	100
	G8A\WXJ	2.1038e+038*	2.10531e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	G8A\WXC	0*	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
	G8A\WID	60.1492*	60.9199	°F	Inlet Dew Point Temperature	0	100

D-R



Left Cursor 05/05/01 09:05:03 PM.879 - Right Cursor 05/05/01 09:05:17 PM.393 - Difference 13.5135 seconds

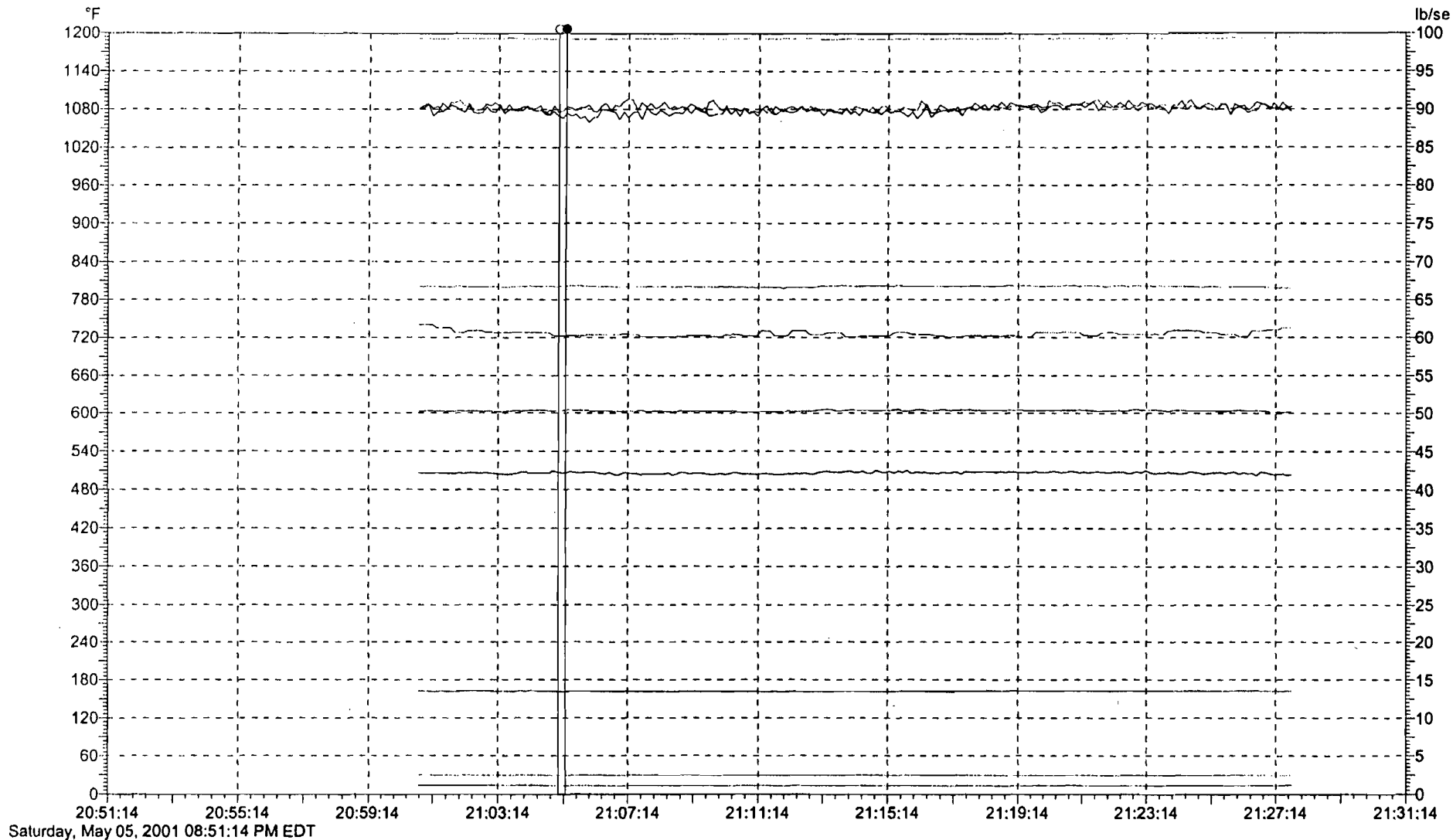
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1191.7	1192.11	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fgg	13.488	13.4789	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	89.665	90.283	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	89.1196	89.4075	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	89.1196	89.4075	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0111393	0.0111278	#H/#A	Specific Humidity	0	1
		G8A\DWATT	84.5584	84.5248	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.454	133.474	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.3124	50.417	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47272	2.47378	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10533e+038	2.10623e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXK	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2



Saturday, May 05, 2001 08:39:14 PM EDT

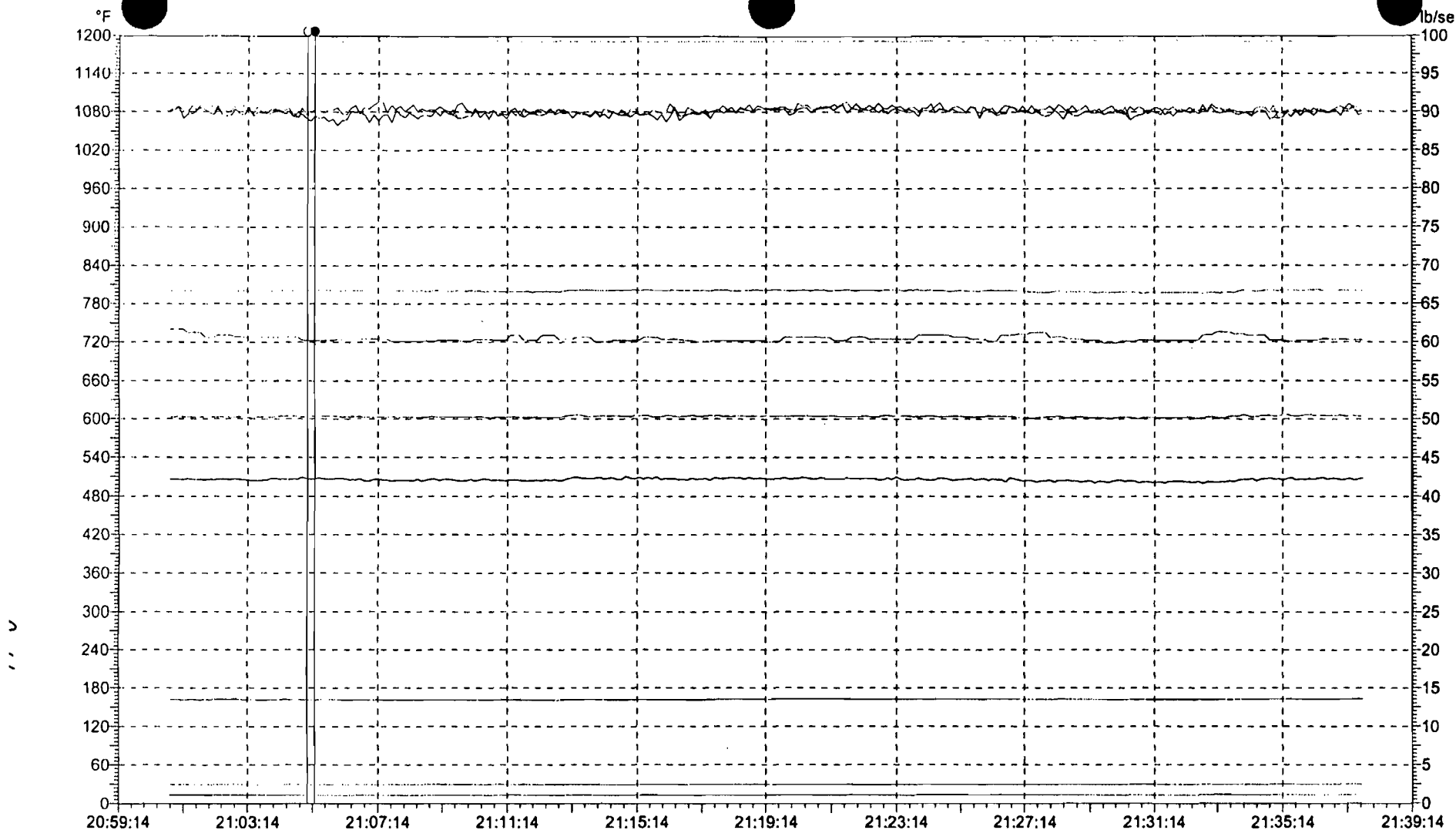
Left Cursor 05/05/01 09:05:03 PM.879 - Right Cursor 05/05/01 09:05:17 PM.393 - Difference 13.5135 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1191.7	1192.1	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fgg	13.4877	13.4789	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	89.6723	90.2717	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	89.1086	89.3937	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	89.1086	89.3937	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.011139	0.0111279	#H/#A	Specific Humidity	0	1
		G8A\DWATT	84.5506	84.521	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.46	133.477	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.312	50.4141	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47272	2.47376	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10533e+038	2.10621e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8A\tdc	60.2644	60.2424	°F	Inlet Dew Point Temperature	0	100



Left Cursor 05/05/01 09:05:03 PM.879 - Right Cursor 05/05/01 09:05:17 PM.393 - Difference 13.5135 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8AITTXM	1191.7	1192.09	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8AIfqg	13.4878	13.4789	lb/se	Gas Fuel Flow	0	100
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	89.671	90.2689	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	89.1104	89.3902	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	89.1104	89.3902	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.011139	0.0111279	#H/#A	Specific Humidity	0	1
		G8A\DWATT	84.5519	84.5201	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.459	133.477	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.312	50.4134	DGA	IGV angle in deg	0	100
		G8AIWQ	2.47272	2.47375	lb/se	Water Injection Flow from Feedback	0	100
		G8AIWXJ	2.10533e+038	2.1062e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8AIWXC	0	0	ratio	Ratio of Rec Fuel to NOx Water Flow	0	2

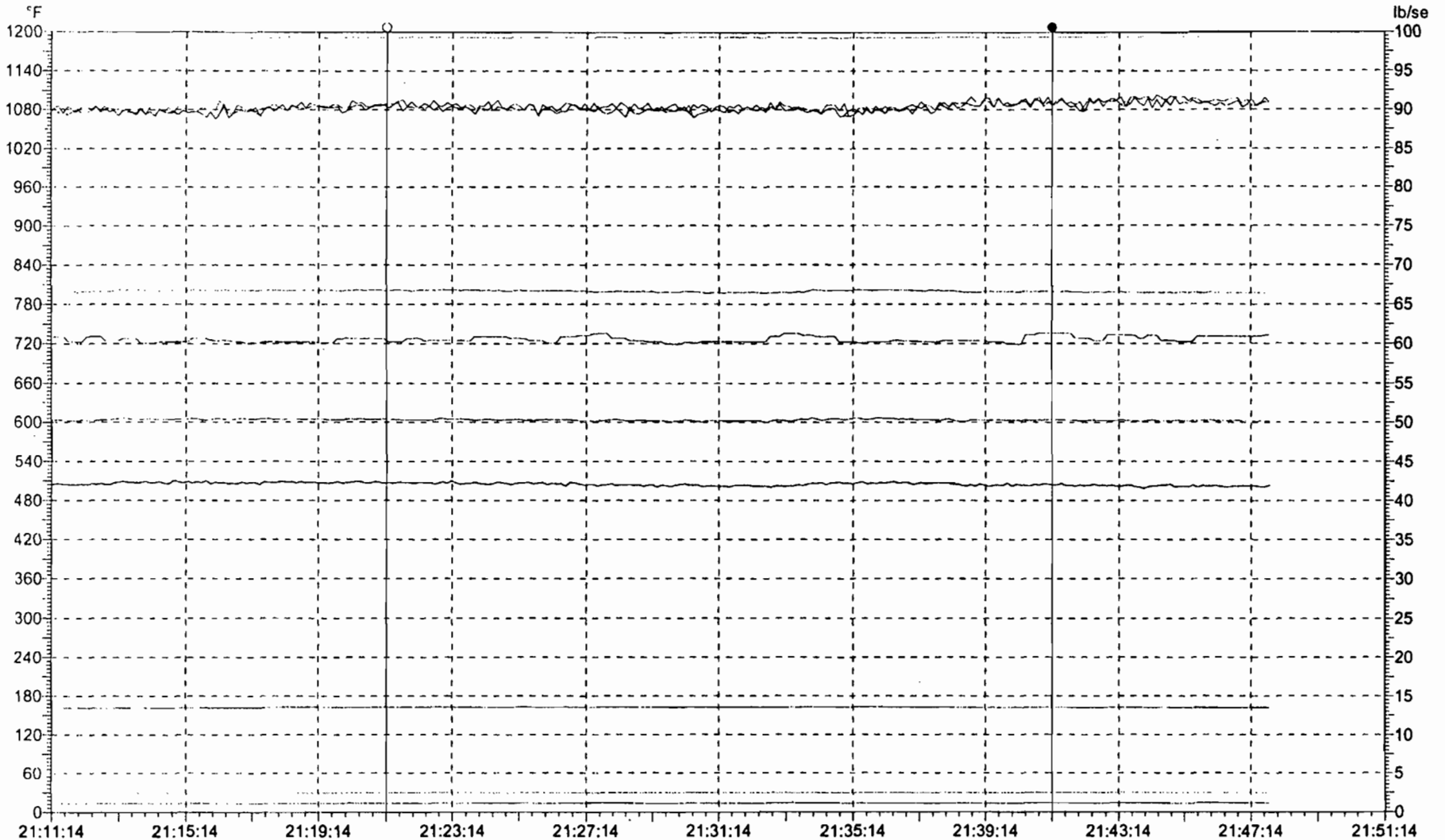


Saturday, May 05, 2001 08:59:14 PM EDT

Left Cursor 05/05/01 09:05:03 PM.879 - Right Cursor 05/05/01 09:05:17 PM.393 - Difference 13.5135 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1191.7	1192.11	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fqg	13.488	13.4789	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	89.6662	90.2858	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\clif1b	89.1177	89.411	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	89.1177	89.411	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0111392	0.0111277	#H/#A	Specific Humidity	0	1
		G8A\DWATT	84.5571	84.5257	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.455	133.473	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.3123	50.4177	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47272	2.47378	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10533e+038	2.10623e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8A\itdp	60.2649	60.2432	°F	Inlet Dew Point Temperature	0	100

A-12



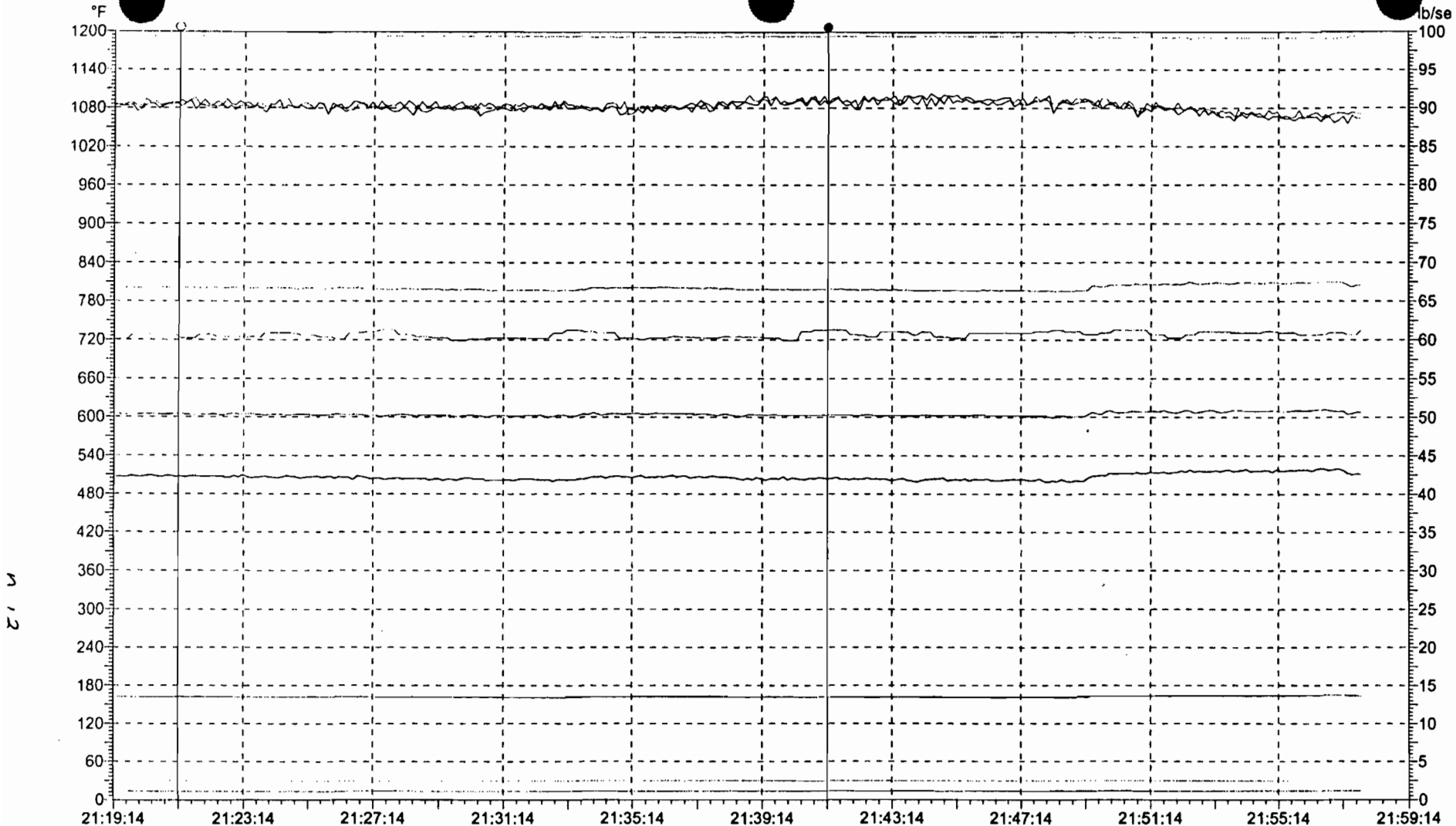
Saturday, May 05, 2001 09:11:14 PM EDT

Left Cursor 05/05/01 09:21:14 PM.149 - Right Cursor 05/05/01 09:41:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1192.41	1193.01	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fqg	13.5767	13.525	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	90.8601	90.6381	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	90.4445	90.6625	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	90.4047	90.5759	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0112131	0.0116033	#H/#A	Humidity	0	1
		G8A\DWATT	84.5613	84.0563	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.495	133.103	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.4247	50.3261	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47221	2.47376	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10489e+038	2.10622e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

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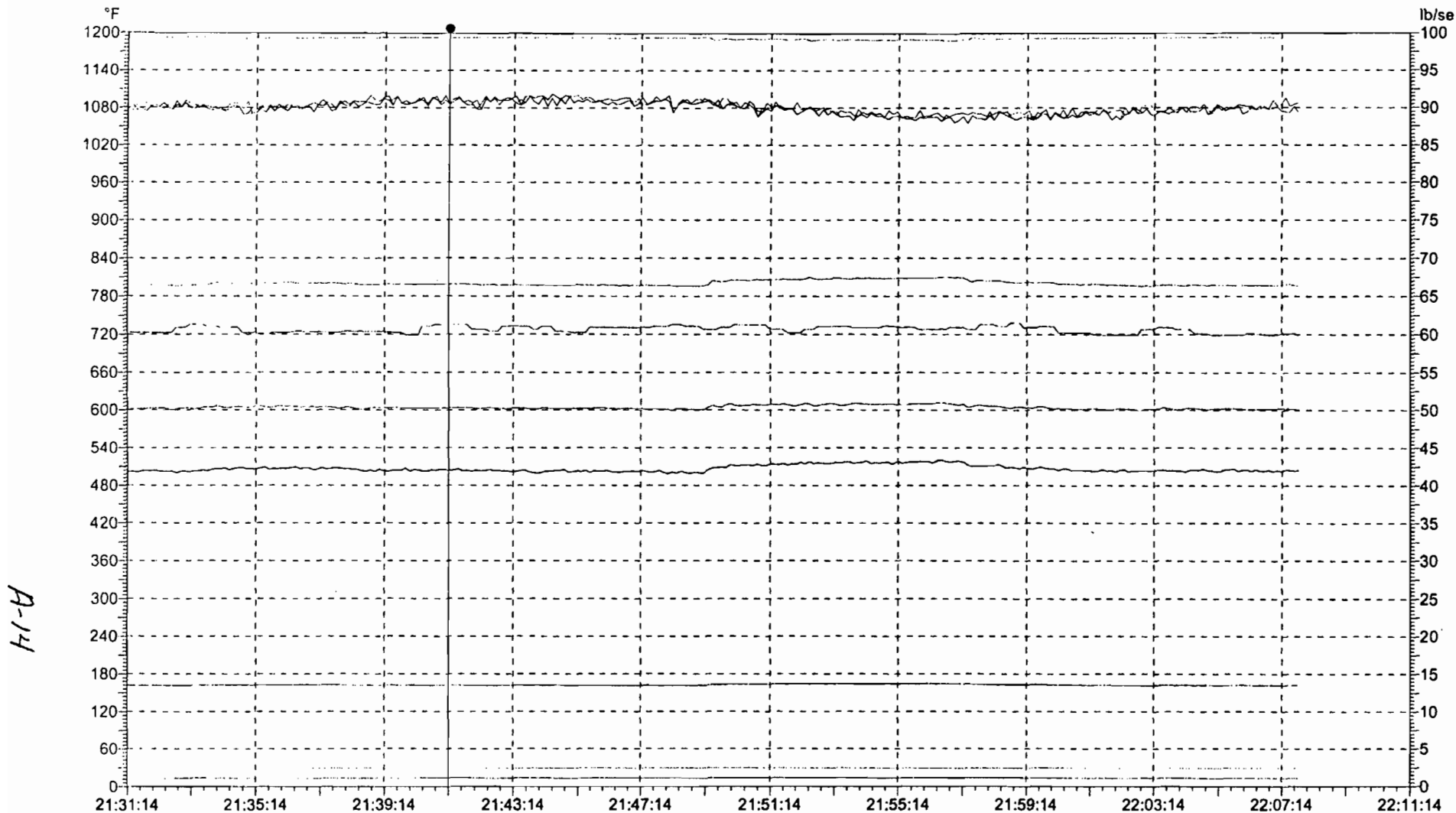
performance.trn - Event 6 of 7 - Printed 05/05/01 09:58:17 PM



Saturday, May 05, 2001 09:19:14 PM EDT

Left Cursor 05/05/01 09:21:14 PM.149 - Right Cursor 05/05/01 09:41:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8AITTXM	1192.42	1193.01	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8AIfqg	13.5762	13.524	lb/se	Gas Fuel Flow	0	100
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8Aictif1a	90.8511	90.6018	°F	Compressor Inlet Thermocouple 1A	0	100
		G8Aictif1b	90.4555	90.6498	°F	Compressor Inlet Thermocouple 1B	0	100
		G8AICTIM	90.4136	90.5599	°F	Compressor Inlet Temperature	0	100
		G8AICMHUM	0.0112177	0.0116031	#H/#A	Specific Humidity	0	1
		G8AIDWATT	84.5578	84.0489	MW	Generator Watts Max Selected	0	200
		G8Aicpd	133.493	133.101	psia	Compressor Discharge Press Max Select	0	200
		G8Aicsgv	50.425	50.3255	DGA	IGV angle in deg	0	100
		G8AIWQ	2.4722	2.47378	lb/se	Water Injection Flow from Feedback	0	100
		G8AIWXJ	2.10488e+038	2.10623e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8AIDWATD	60.4448	61.2853	°F	Inlet Dew Point Temperature	0	100



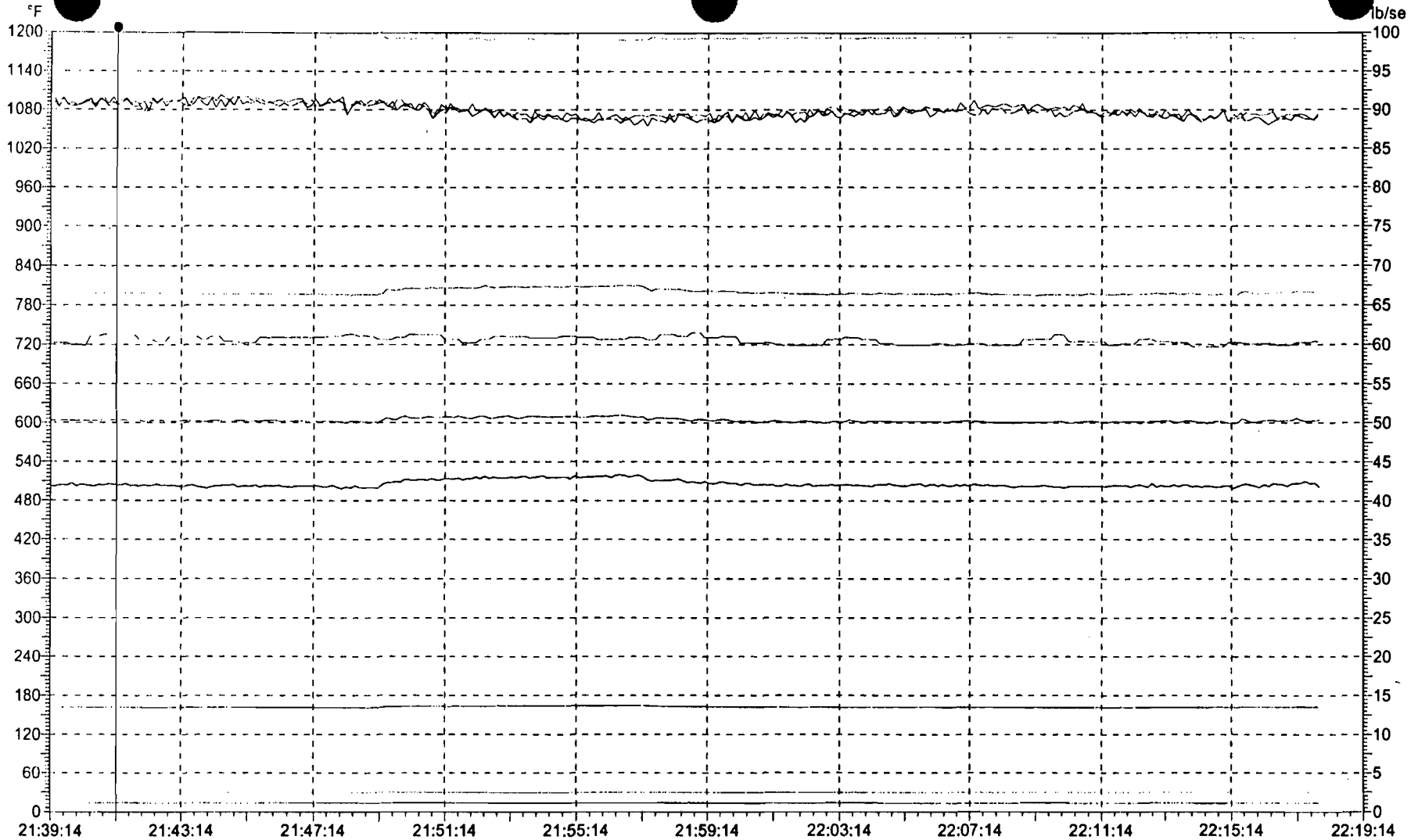
Saturday, May 05, 2001 09:31:14 PM EDT

Left Cursor 05/05/01 09:41:14 PM.149 - Right Cursor 05/05/01 09:41:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8ATTXM	1193.01	1193.01	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8AIfqg	13.5241	13.5241	lb/se	Gas Fuel Flow	0	100
		G8AIfQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8AIfctif1a	90.6079	90.6079	°F	Compressor Inlet Thermocouple 1A	0	100
		G8AIfctif1b	90.6519	90.6519	°F	Compressor Inlet Thermocouple 1B	0	100
		G8AIfCTIM	90.5626	90.5626	°F	Compressor Inlet Temperature	0	100
		G8AIfCMHUM	0.0116031	0.0116031	#H/#A	Specific Humidity	0	1
		G8AIfDWATT	84.0502	84.0502	MW	Generator Watts Max Selected	0	200
		G8AIfcpd	133.102	133.102	psia	Compressor Discharge Press Max Select	0	200
		G8AIfcsgv	50.3256	50.3256	DGA	IGV angle in deg	0	100
		G8AIfWQ	2.47377	2.47377	lb/se	Water Injection Flow from Feedback	0	100
		G8AIfWXJ	2.10623e+038	2.10623e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8AIfWXC	0	0	ratio	Ratio of Rec Fuel to NOx Water Flow	0	2

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performance.tm - Event 6 of 7 - Printed 05/05/01 10:18:23 PM

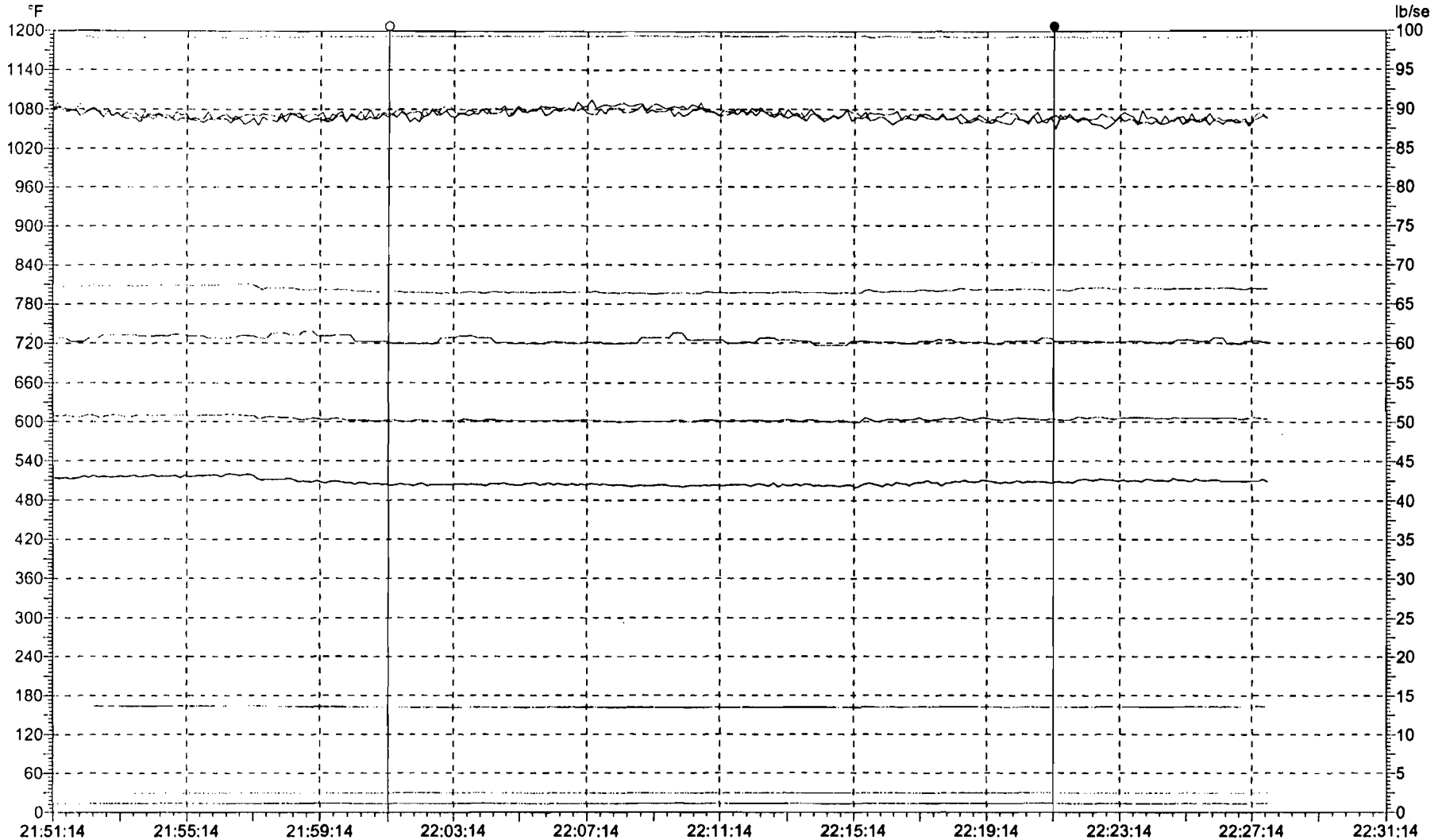


Saturday, May 05, 2001 09:39:14 PM EDT

Left Cursor 05/05/01 09:41:14 PM.149 - Right Cursor 05/05/01 09:41:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8AITTXM	1193.01	1193.01	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8AIfgg	13.5248	13.5248	lb/se	Gas Fuel Flow	0	100
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8Aiclif1a	90.6321	90.6321	°F	Compressor Inlet Thermocouple 1A	0	100
		G8Aiclif1b	90.6603	90.6603	°F	Compressor Inlet Thermocouple 1B	0	100
		G8AICTIM	90.5732	90.5732	°F	Compressor Inlet Temperature	0	100
		G8AICMHUM	0.0116033	0.0116033	#H/#A	Specific Humidity	0	1
		G8AIDWATT	84.0551	84.0551	MW	Generator Watts Max Selected	0	200
		G8Alcpd	133.103	133.103	psia	Compressor Discharge Press Max Select	0	200
		G8Alcsgv	50.326	50.326	DGA	IGV angle in deg	0	100
		G8AIWQ	2.47377	2.47377	lb/se	Water Injection Flow from Feedback	0	100
		G8AIWXJ	2.10622e+038	2.10622e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8AIWdp	61.2855	61.2855	°F	Inlet Dew Point Temperature	0	100

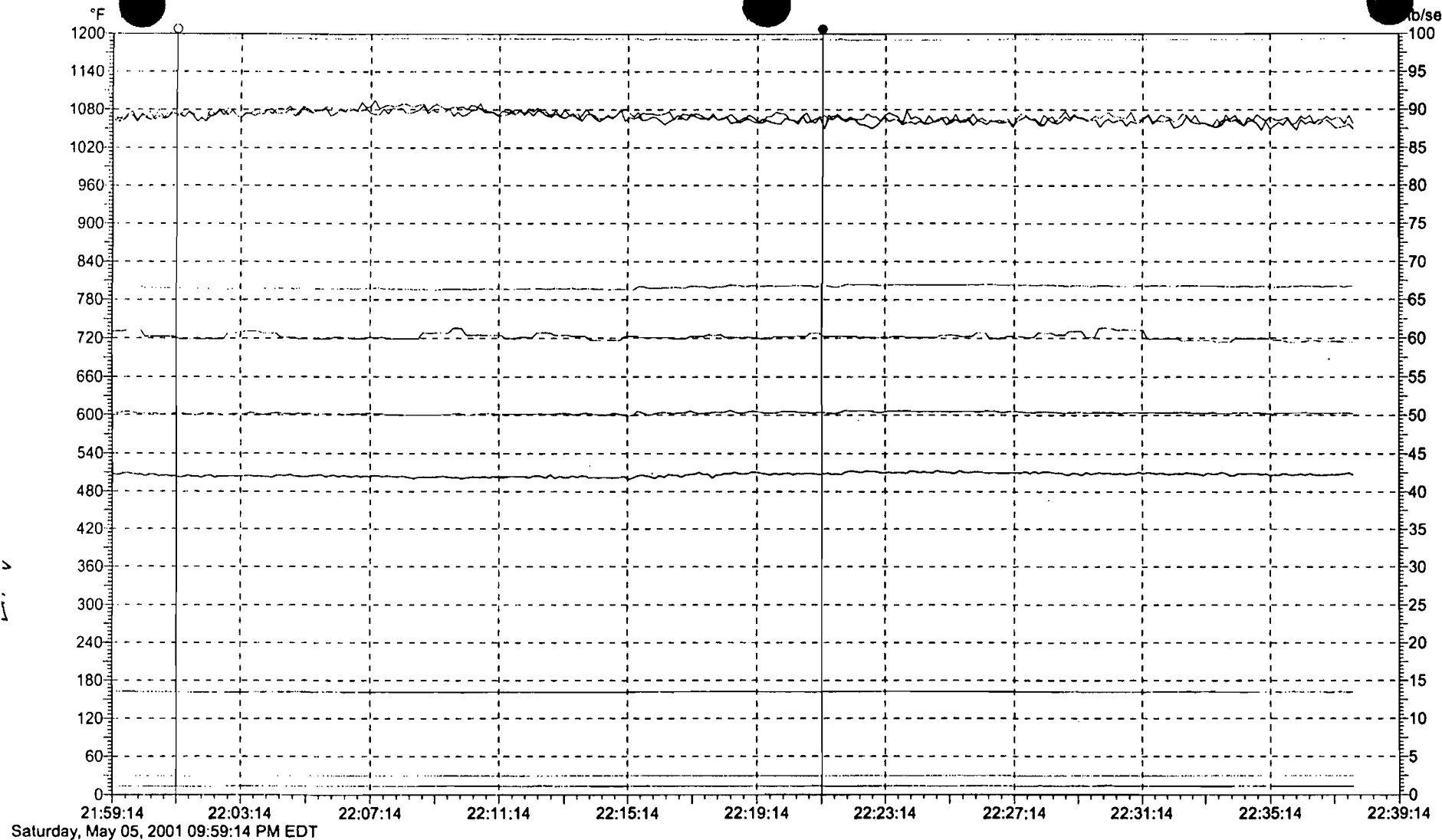
A-116



Saturday, May 05, 2001 09:51:14 PM EDT

Left Cursor 05/05/01 10:01:14 PM.149 - Right Cursor 05/05/01 10:21:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1192.65	1191.35	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fqg	13.5353	13.5237	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	89.4093	89.1369	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	89.1122	88.1138	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	89.1122	88.0561	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0110845	0.0112052	#H/#A	Specific Humidity	0	1
		G8A\DWATT	84.0235	84.6322	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.177	133.566	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.2463	50.3762	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47369	2.47409	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10616e+038	2.1065e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2



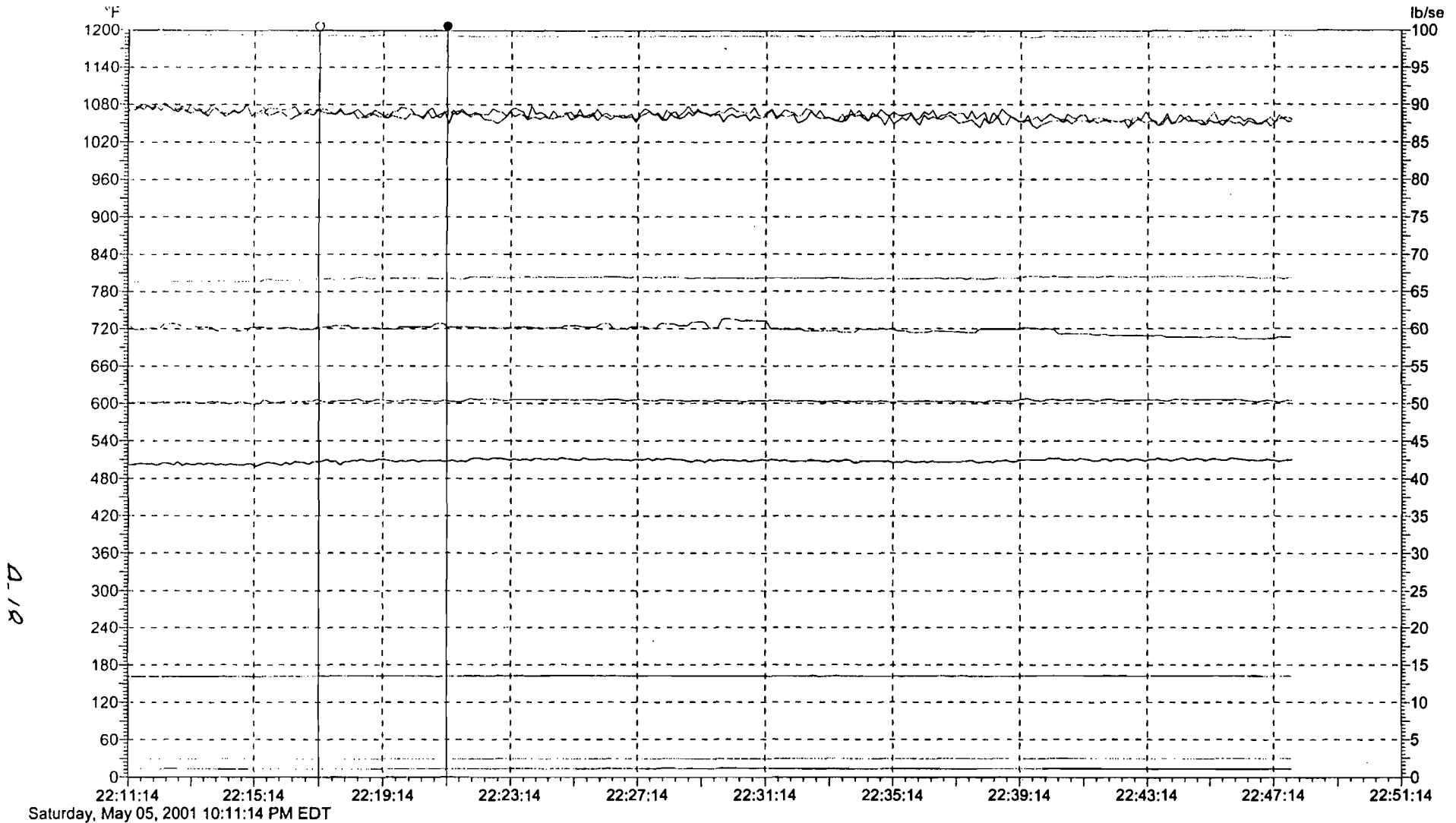
Saturday, May 05, 2001 09:59:14 PM EDT

Left Cursor 05/05/01 10:01:14 PM.149 - Right Cursor 05/05/01 10:21:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	...	G8AITTXM	1192.67	1191.34	°F	Exhaust Temp Median Corrected By Average	0	1200
>	---	G8AIfqg	13.5354	13.5237	lb/se	Gas Fuel Flow	0	100
	---	G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8Aictif1a	89.4075	89.1457	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8Aictif1b	89.1064	88.0572	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8AICTIM	89.1064	88.0043	°F	Compressor Inlet Temperature	0	100
	---	G8AICMHUM	0.0110873	0.0111985	#H/#A	Specific Humidity	0	1
	---	G8AIDWATT	84.0336	84.6396	MW	Generator Watts Max Selected	0	200
	---	G8Aicpd	133.176	133.566	psia	Compressor Discharge Press Max Select	0	200
	---	G8Aicsgv	50.2467	50.3731	DGA	IGV angle in deg	0	100
	---	G8AIWQ	2.47367	2.47407	lb/se	Water Injection Flow from Feedback	0	100
	---	G8AIWXJ	2.10614e+038	2.10648e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
	---	G8AIWDE	50.4654	50.4074	°F	Inlet Dew Point Temperature	0	100

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performance.tm - Event 6 of 7 - Printed 05/05/01 10:48:17 PM

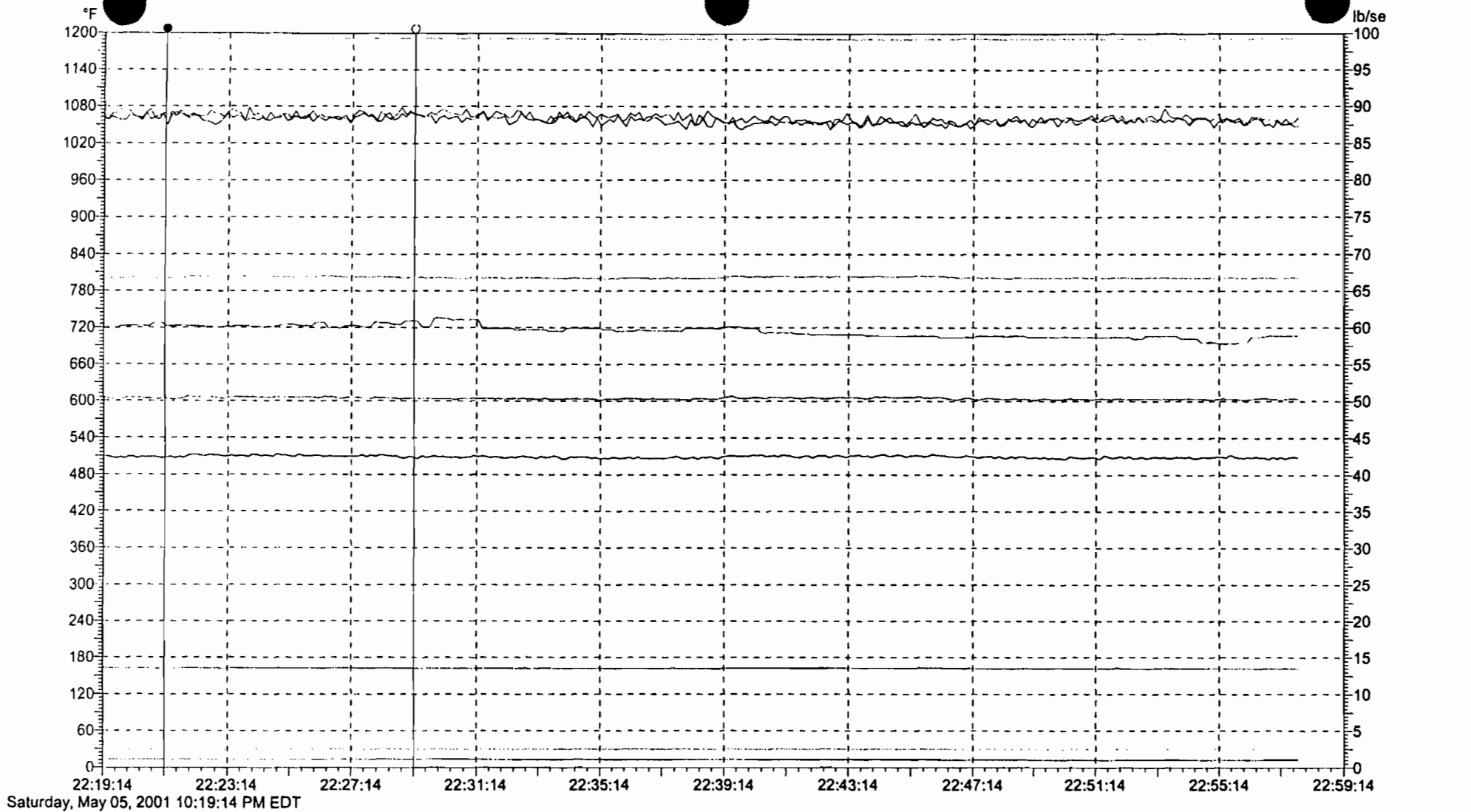


Left Cursor 05/05/01 10:17:14 PM.149 - Right Cursor 05/05/01 10:21:14 PM.149 - Difference 240 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8AITTXM	1191.28	1191.34	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8AIfgg	13.5739	13.5237	lb/se	Gas Fuel Flow	0	100
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8Aictif1a	89.3138	89.1442	°F	Compressor Inlet Thermocouple 1A	0	100
		G8Aictif1b	89.352	88.0666	°F	Compressor Inlet Thermocouple 1B	0	100
		G8AICTIM	89.1857	88.013	°F	Compressor Inlet Temperature	0	100
		G8AICMHUM	0.0111324	0.0111996	#H/#A	Specific Humidity	0	1
		G8AIDWATT	84.5617	84.6384	MW	Generator Watts Max Selected	0	200
		G8Aicpd	133.544	133.566	psia	Compressor Discharge Press Max Select	0	200
		G8Aicsgv	50.4881	50.3736	DGA	IGV angle in deg	0	100
		G8AIWQ	2.47357	2.47407	lb/se	Water Injection Flow from Feedback	0	100
		G8AIWXJ	2.10606e+038	2.10648e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8AIDW	60.2668	60.4088	°F	Inlet Dew Point Temperature	-	-

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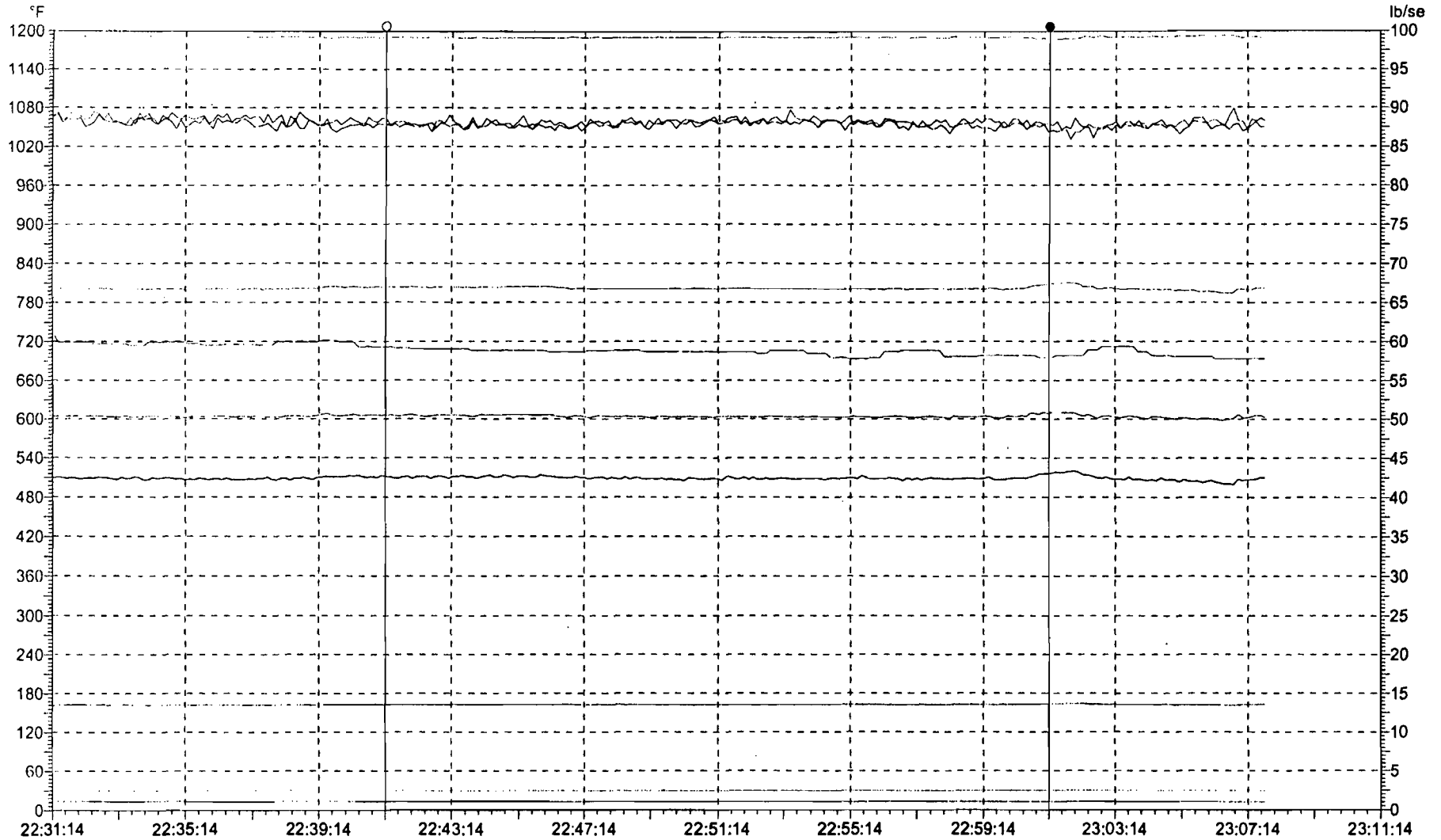
performance.tn - Event 6 of 7 - Printed 05/05/01 10:58:19 PM



Left Cursor 05/05/01 10:21:14 PM.149 - Right Cursor 05/05/01 10:29:14 PM.149 - Difference 480 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8A\TTXM	1191.35	1191.32	°F	Exhaust Temp Median Corrected By Average	0	1200
>	---	G8A\fgg	13.5237	13.5462	lb/se	Gas Fuel Flow	0	100
	---	G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8A\ctif1a	89.1384	88.9359	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8A\ctif1b	88.1044	88.9802	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8A\CTIM	88.0474	88.9359	°F	Compressor Inlet Temperature	0	100
	---	G8A\CMHUM	0.0112041	0.0114449	#H/#A	Specific Humidity	0	1
	---	G8A\DWATT	84.6335	84.72	MW	Generator Watts Max Selected	0	200
	---	G8A\cpd	133.566	133.767	psia	Compressor Discharge Press Max Select	0	200
	---	G8A\csgv	50.3757	50.4091	DGA	IGV angle in deg	0	100
	---	G8A\WQ	2.47409	2.4737	lb/se	Water Injection Flow from Feedback	0	100
	---	G8A\WXJ	2.10649e+038	2.10616e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
	---	G8A\tdp	60.4194	60.9296	°F	Inlet Dew Point Temperature	0	100

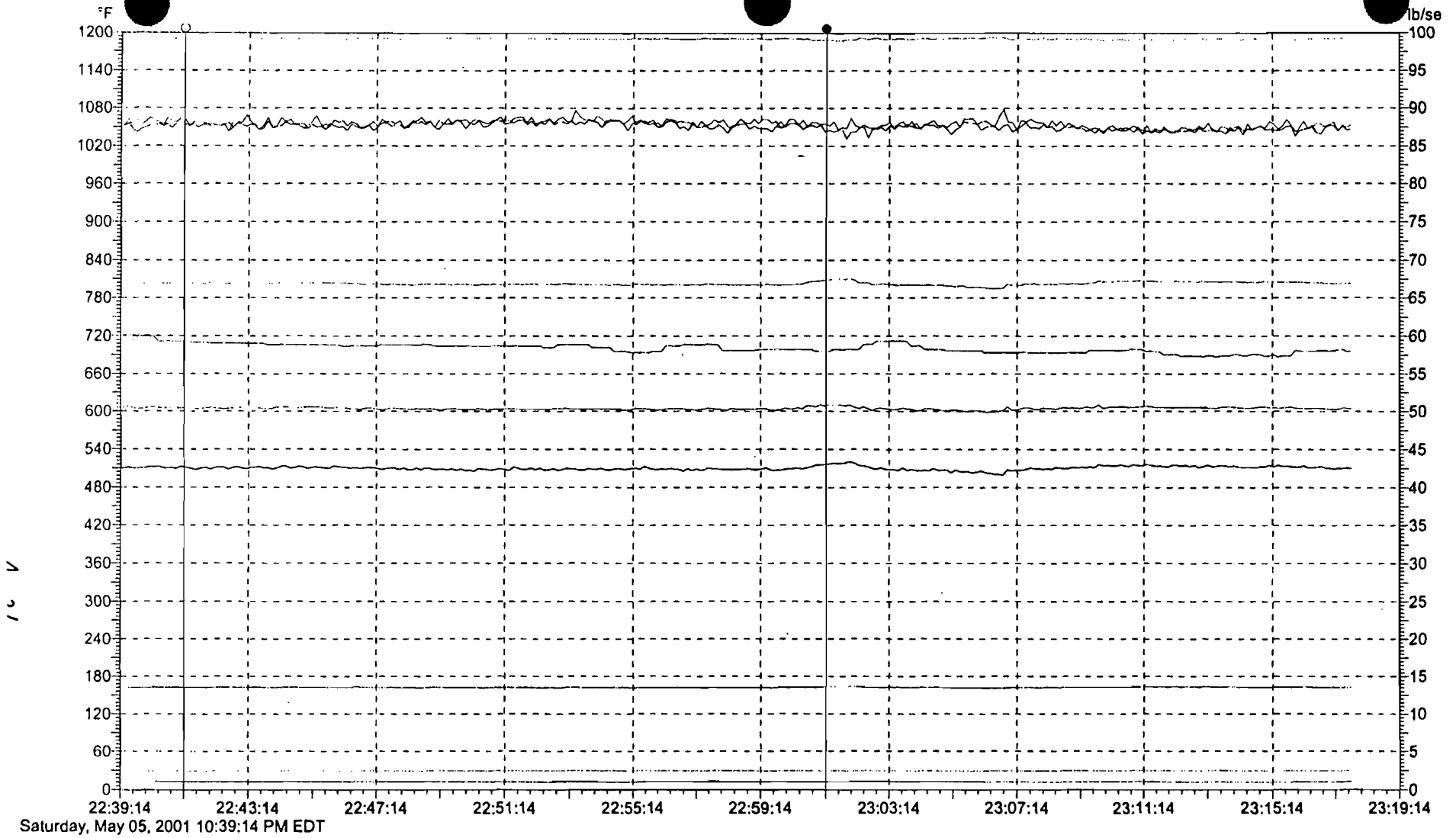
A-20



Saturday, May 05, 2001 10:31:14 PM EDT

Left Cursor 05/05/01 10:41:14 PM.149 - Right Cursor 05/05/01 11:01:14 PM.149 - Difference 1200 seconds

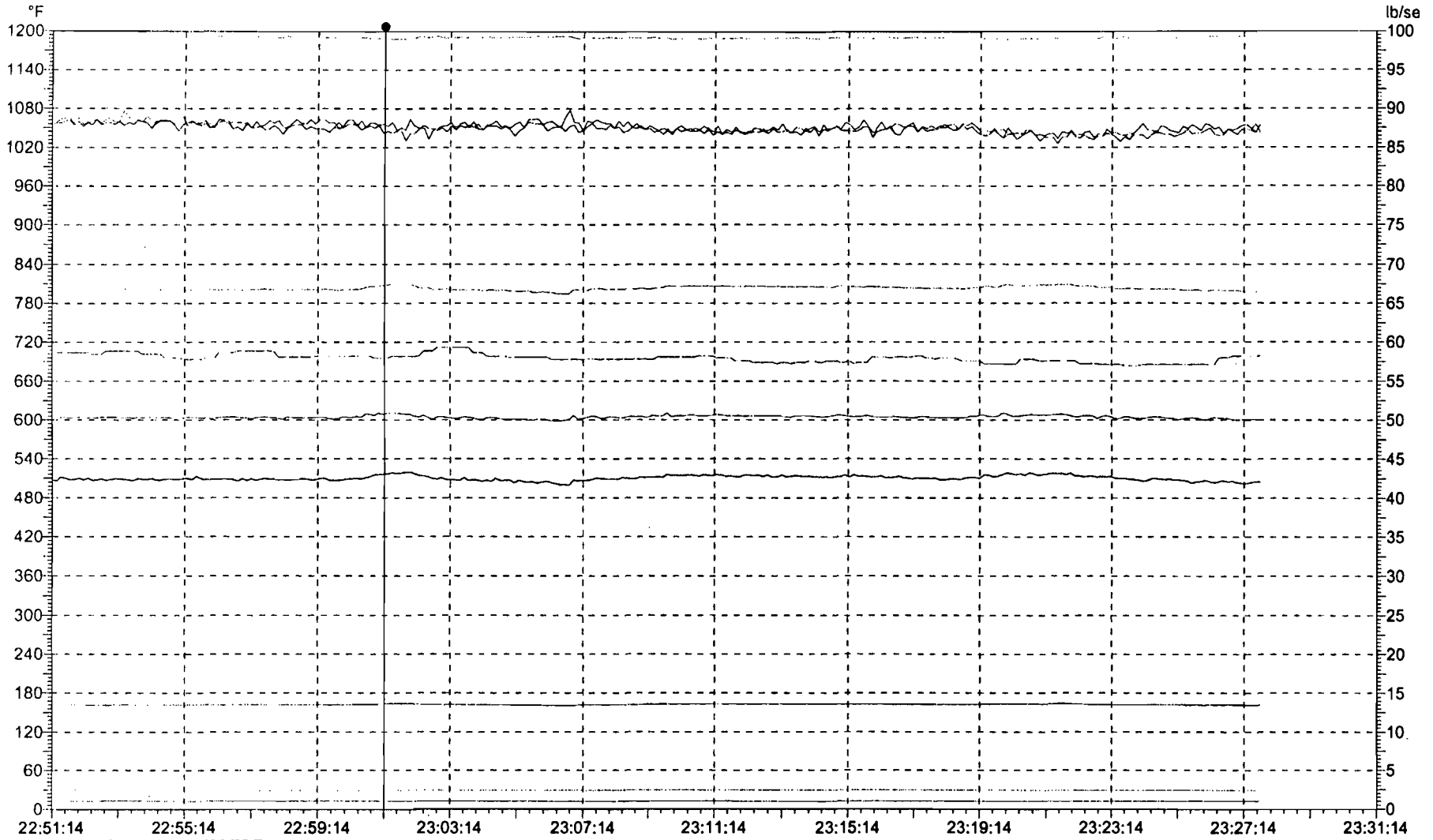
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	...	G8A\TTXM	1190.67*	1188.72	°F	Exhaust Temp Median Corrected By Average	0	1200
>	---	G8A\fqg	13.5769*	13.6492	lb/se	Gas Fuel Flow	0	100
	---	G8A\FQLM1	0*	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8A\ctif1a	88.668*	87.9257	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8A\ctif1b	87.9075*	86.9356	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8A\CTIM	87.9075*	86.9356	°F	Compressor Inlet Temperature	0	100
	---	G8A\CMHUM	0.010773*	0.0103149	#H/#A	Specific Humidity	0	1
	---	G8A\DWATT	85.2954*	86.0281	MW	Generator Watts Max Selected	0	200
	---	G8A\cpd	133.91*	134.675	psia	Compressor Discharge Press Max Select	0	200
	---	G8A\csgv	50.4896*	50.7769	DGA	IGV angle in deg	0	100
	---	G8A\WQ	2.47499*	2.47533	lb/se	Water Injection Flow from Feedback	0	100
	---	G8A\WXJ	2.10726e+038*	2.10755e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8A\WXC	0*	0	ratio	Ratio of Req Fuel to NOx Water Flow	0	2



Left Cursor 05/05/01 10:41:14 PM.149 - Right Cursor 05/05/01 11:01:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1190.66	1188.73	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fqg	13.5766	13.6502	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	88.6677	87.9161	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	87.9061	86.9428	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	87.9061	86.9428	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0107736	0.0103146	#H/#A	Specific Humidity	0	1
		G8A\DWATT	85.3019	86.0321	MW	Generator Watts Max Selected	0	200
		G8A\cpd	133.913	134.68	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.4877	50.7822	DGA	IGV angle in deg	0	100
		G8A\WQ	2.47499	2.47529	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10726e+038	2.10752e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2
		G8A\tdo	59.3251	57.9746	°F	Inlet Dew Point Temperature	0	100

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Saturday, May 05, 2001 10:51:14 PM EDT

Left Cursor 05/05/01 11:01:14 PM.149 - Right Cursor 05/05/01 11:01:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8A\TTXM	1188.73	1188.73	°F	Exhaust Temp Median Corrected By Average	0	1200
>		G8A\fqg	13.65	13.65	lb/se	Gas Fuel Flow	0	100
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8A\ctif1a	87.9177	87.9177	°F	Compressor Inlet Thermocouple 1A	0	100
		G8A\ctif1b	86.9416	86.9416	°F	Compressor Inlet Thermocouple 1B	0	100
		G8A\CTIM	86.9416	86.9416	°F	Compressor Inlet Temperature	0	100
		G8A\CMHUM	0.0103147	0.0103147	#H/#A	Specific Humidity	0	1
		G8A\DWATT	86.0314	86.0314	MW	Generator Watts Max Selected	0	200
		G8A\cpd	134.679	134.679	psia	Compressor Discharge Press Max Select	0	200
		G8A\csgv	50.7813	50.7813	DGA	IGV angle in deg	0	100
		G8A\WQ	2.4753	2.4753	lb/se	Water Injection Flow from Feedback	0	100
		G8A\WXJ	2.10752e+038	2.10752e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

BASE LOAD

PLANT: Florida Power and Light RUN NUMBER 8A-100-1 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 17:25 ENTERED BY: John Maxwell
 LOCATION: 8A Gas Turbine RUN END TIME: 18:25 CHECKED BY:
 START DATE: 5/7/01
 END DATE: 5/7/01 MAXIMUM RESPONSE TIME SEC. 60

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	18.00	18.01	18.03
	MID	12.02	5.01	10.03	10.02	10.00
	LO			6.03	6.02	6.04
	ZERO	0.00	0.00	-0.01	0.00	-0.04
RESPONSE TIME (SECONDS)		32	31	58	57	56
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.0%	0.0%	0.0%	0.1%	0.2%
	MID	0.1%	0.1%	0.1%	0.1%	0.0%
	LO	N/A	N/A	0.2%	0.1%	0.2%
	ZERO	N/A	N/A	-0.1%	N/A	-0.2%
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
	UPSCALE	12.00	8.02	9.95	10.10	10.00
	ZERO	0.01	0.01	0.03	0.00	0.03
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi - Cai)/Span)x100%	UPSCALE	0.0%	0.2%	-0.3%	0.5%	0.0%
	ZERO	0.0%	0.1%	0.2%	0.0%	0.4%
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.04	8.06	10.15	10.07	10.01
	ZERO	0.03	-0.02	-0.03	0.04	0.00
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/Span)x100%	UPSCALE	0.2%	0.6%	0.8%	0.4%	0.0%
	ZERO	0.1%	0.2%	-0.1%	0.2%	0.2%
DRIFT CHECK, D D = ((Cbf - Cbi)/Span)x100%	UPSCALE	0.2%	0.4%	1.0%	-0.1%	0.0%
	ZERO	0.1%	0.1%	-0.3%	0.2%	-0.2%
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co = (Cbi,zero + Cbf,zero)/2		0.02	0.02	0.00	0.02	0.02
AVERAGE % BIAS	UPSCALE	0.1%	0.4%	0.2%	0.4%	0.0%
	ZERO	0.1%	0.2%	0.1%	0.1%	0.3%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm = (Cbi,upscale + Cbf,upscale)/2		12.02	8.04	10.05	10.09	10.01
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.70	4.20	9.50	0.20	-0.10

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.68	4.17	9.45	0.18	0.00
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.41	7.72	0.15	0.00

PLANT: Florida Power and Light	RUN NUMBER 8A-100-2	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 19:10	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 20:10	CHECKED BY:
START DATE: 5/7/01		
END DATE: 5/7/01	MAXIMUM RESPONSE TIME SEC. 60	

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	18.00	18.01	18.03
	MID	12.02	5.01	10.03	10.02	10.00
	LO			6.03	6.02	6.04
	ZERO	0.00	0.00	-0.01	0.00	-0.04
RESPONSE TIME (SECONDS)		32	31	58	57	56
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.0%	0.0%	0.0%	0.1%	0.2%
	MID	0.1%	0.1%	0.1%	0.1%	0.0%
	LO	N/A	N/A	0.2%	0.1%	0.2%
	ZERO	N/A	N/A	-0.1%	N/A	-0.2%
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
	UPSCALE	12.04	8.06	10.15	10.07	10.01
	ZERO	0.03	0.02	-0.03	0.04	0.00
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi - Cai)/Span)x100%	UPSCALE	0.2%	0.6%	0.8%	0.4%	0.0%
	ZERO	0.1%	0.2%	-0.1%	0.2%	0.2%
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.10	8.10	10.01	10.00	10.03
	ZERO	0.04	0.03	-0.02	0.00	-0.01
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/(Span))x100%	UPSCALE	0.4%	1.0%	0.0%	0.0%	0.1%
	ZERO	0.2%	0.3%	-0.1%	0.0%	0.2%
DRIFT CHECK, D D = ((Cbf - Cbi)/(Span))x100%	UPSCALE	0.2%	0.4%	-0.7%	-0.4%	0.1%
	ZERO	0.0%	0.1%	0.1%	-0.2%	-0.1%
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co=(Cbi,zero+Cbf,zero)/2		0.04	0.03	-0.03	0.02	-0.01
AVERAGE % BIAS	UPSCALE	0.3%	0.8%	0.4%	0.2%	0.1%
	ZERO	0.1%	0.3%	-0.1%	0.1%	0.2%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm=(Cbi,upscale+Cbf,upscale)/2		12.07	8.08	10.08	10.04	10.02
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.72	4.28	9.80	0.28	-0.04

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.65	4.23	9.72	0.26	0.00
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9 - % O2)		3.44	7.91	0.21	0.00

PLANT: Florida Power and Light
 CITY, STATE: Martin Station
 LOCATION: 8A Gas Turbine
 START DATE: 5/7/01
 END DATE: 5/7/01

RUN NUMBER 8A-100-3
 RUN START TIME: 20:50
 RUN END TIME: 21:50
 MAXIMUM RESPONSE TIME SEC. 60

CEM OPERATOR: John Maxwell
 ENTERED BY: John Maxwell
 CHECKED BY:

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	18.00	18.01	18.03
	MID	12.02	5.01	10.03	10.02	10.00
	LO			6.03	6.02	6.04
	ZERO	0.00	0.00	-0.01	0.00	-0.04
RESPONSE TIME (SECONDS)		32	31	58	57	56
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.0%	0.0%	0.0%	0.1%	0.2%
	MID	0.1%	0.1%	0.1%	0.1%	0.0%
	LO	N/A	N/A	0.2%	0.1%	0.2%
	ZERO	N/A	N/A	-0.1%	N/A	-0.2%
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
	UPSCALE	12.10	8.10	10.01	10.00	10.03
	ZERO	0.04	0.03	-0.02	0.00	-0.01
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi - Cai)/Span)x100%	UPSCALE	0.4%	1.0%	0.0%	0.0%	0.1%
	ZERO	0.2%	0.3%	-0.1%	0.0%	0.2%
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.08	8.09	9.99	10.08	10.04
	ZERO	0.03	0.05	-0.04	0.06	0.01
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/(Span))x100%	UPSCALE	0.3%	0.9%	0.0%	0.4%	0.2%
	ZERO	0.1%	0.5%	-0.2%	0.3%	0.3%
DRIFT CHECK, D D = ((Cbf - Cbi)/(Span))x100%	UPSCALE	-0.1%	-0.1%	-0.1%	0.4%	0.0%
	ZERO	0.0%	0.2%	-0.1%	0.3%	0.1%
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co = (Cbi.zero + Cbf.zero)/2		0.04	0.04	-0.03	0.03	0.00
AVERAGE % BIAS	UPSCALE	0.4%	0.9%	0.0%	0.2%	0.2%
	ZERO	0.1%	0.4%	-0.1%	0.2%	0.2%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm = (Cbi.upscale + Cbf.upscale)/2		12.09	8.10	10.00	10.04	10.04
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.70	4.30	9.50	0.20	0.00

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.60	4.23	9.50	0.17	0.00
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.42	7.68	0.14	0.00

GE-Energy & Environmental Research

Direct Cal 5-7-01

15 sec Averaged data

For 5-07-2001 @ 12:21:53.37

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
-0.08	-0.02	0.06	-0.01	-3.47	00:12:21:53.004
-0.06	-0.02	0.05	0.02	-3.42	00:12:22:08.004
-0.01	-0.02	0.05	0.04	-3.55	00:12:22:23.004
-0.01	-0.01	0.05	0.03	-3.57	00:12:22:38.004
-0.02	0	0.05	0.04	-3.62	00:12:22:53.004
-0.02	0	0.01	0.01	-3.67	00:12:23:08.004
-0.01	0	-0.01	0.01	-3.71	00:12:23:23.004
-0.01	0	-0.01	0.02	-3.79	00:12:23:38.004
0	0	-0.01	0	-3.87	Zero
0.01	0	-0.01	0	-3.99	00:12:24:08.004
0.01	0	-0.01	0	-3.52	00:12:24:23.004
0.02	0	-0.01	0	-0.12	00:12:24:38.004
-0.01	0	-0.01	0	-0.02	00:12:24:53.004
3.4	0.14	0	0	-0.12	00:12:25:08.004
20.39	0.01	0.88	0	-0.17	00:12:25:23.004
21.04	0.01	1.83	0	-0.2	00:12:25:38.004
21.05	0	0.57	0	-0.24	00:12:25:53.004
21.01	0	0.03	0	-0.29	00:12:26:08.004
21	0	0	0	-0.33	O2 High
21	0	0	-0.01	-0.37	00:12:26:38.004
21.01	0	-0.01	-0.01	-0.39	00:12:26:53.004
20.94	0	-0.01	0	-0.4	00:12:27:08.004
14.88	0.01	0	-0.02	-0.42	00:12:27:23.004
12.03	0	-0.01	-0.02	-0.43	00:12:27:38.004
12.02	0	-0.01	-0.01	-0.45	O2 Mid
12.02	0	-0.01	0	-0.43	00:12:28:08.004
12.02	0	-0.02	-0.02	-0.45	00:12:28:23.004
12.02	0	-0.03	-0.02	-0.48	00:12:28:38.004
12.02	0	-0.03	-0.02	-0.48	00:12:28:53.004
12.02	0	-0.03	-0.01	-0.52	00:12:29:08.004
12.02	0	-0.03	-0.02	-0.57	00:12:29:23.004
12.02	0	-0.03	-0.02	-0.62	00:12:29:38.004
12.02	0	-0.03	0	-0.62	00:12:29:53.004
12.01	0	-0.03	-0.01	-0.64	00:12:30:08.004
12.01	0.01	-0.03	-0.03	-0.67	00:12:30:23.004
12.01	0	-0.02	-0.03	-0.66	00:12:30:38.004
12.02	0	-0.03	-0.02	-0.68	00:12:30:53.004
11.98	0	-0.02	-0.03	-0.56	00:12:31:08.004
2.9	6.71	-0.03	-0.03	0.01	00:12:31:23.004
0.04	7.96	-0.01	-0.03	0	00:12:31:38.004
0.01	7.96	0	-0.02	-0.03	00:12:31:53.004
0	7.97	-0.01	-0.03	-0.08	00:12:32:08.004
-0.01	7.98	0	-0.03	-0.09	00:12:32:23.004

0	8	-0.01	-0.02	-0.12 00:12:32:38.004
-0.01	8	-0.01	-0.02	-0.1 CO2 High
-0.01	8	-0.01	-0.03	-0.07 00:12:33:08.004
-0.01	8	-0.01	-0.02	-0.05 00:12:33:23.004
-0.02	7.35	-0.01	-0.02	-0.1 00:12:33:38.004
0	5.01	0	-0.02	-0.12 00:12:33:53.004
0	5.01	-0.01	-0.03	-0.18 CO2 Mid
-0.01	5.01	-0.01	-0.02	-0.17 00:12:34:23.004
0	5	-0.01	-0.02	-0.2 00:12:34:38.004
-0.02	4.59	-0.01	-0.02	-0.26 00:12:34:53.004
0.15	0.61	-0.03	-0.02	-0.31 00:12:35:08.004
0.07	0.05	4.26	-0.02	-0.35 00:12:35:23.004
0.01	0.03	11.51	-0.02	-0.36 00:12:35:38.004
0.01	0.02	17.51	-0.02	-0.4 00:12:35:53.004
0.01	0.02	18.65	-0.03	-0.43 00:12:36:08.004
0.01	0.01	18.48	-0.02	-0.46 00:12:36:23.004
0.01	0.01	18.08	-0.02	-0.51 00:12:36:38.004
0.01	0.01	17.87	-0.02	-0.49 00:12:36:53.004
0.01	0.01	17.78	-0.02	-0.51 00:12:37:08.004
0.01	0.01	17.74	-0.02	-0.53 00:12:37:23.004
0	0.01	17.69	-0.02	-0.57 00:12:37:38.004
0	0.01	17.7	-0.02	-0.59 00:12:37:53.004
0.01	0.01	17.69	-0.02	-0.58 00:12:38:08.004
0.01	0.01	17.67	-0.02	-0.6 00:12:38:23.004
0.01	0.01	17.67	-0.02	-0.61 00:12:38:38.004
0.01	0.01	17.86	-0.02	-0.56 00:12:38:53.004
0.01	0.01	18.02	-0.02	-0.02 00:12:39:08.004
0	0	18	-0.02	-0.15 00:12:39:23.004
0	0.01	18	-0.02	-0.19 00:12:39:38.004
0.01	0	18	-0.01	-0.16 NOx High
0	0.01	18	-0.01	-0.21 00:12:40:08.004
-0.02	0	18	-0.02	-0.24 00:12:40:23.004
0.01	0.06	17.89	-0.02	-0.31 00:12:40:38.004
0	0.01	17.6	-0.02	-0.36 00:12:40:53.004
0	0.01	14.05	-0.02	-0.4 00:12:41:08.004
0	0.01	10.17	-0.03	-0.37 00:12:41:23.004
0	0	10.02	-0.03	-0.4 00:12:41:38.004
0.01	0	10.03	-0.02	-0.42 00:12:41:53.004
0	0	10.03	0	-0.39 NOx Mid
0	0	10.03	-0.02	-0.24 00:12:42:23.004
-0.01	0.01	10.03	-0.03	0.07 00:12:42:38.004
0	0.01	10.28	-0.01	0.1 00:12:42:53.004
0	0.01	8.7	-0.03	0.09 00:12:43:08.004
0.01	0	6.33	-0.03	0.09 00:12:43:23.004
0	0	6.04	-0.03	0.06 00:12:43:38.004
0	0	6.03	-0.03	0.08 00:12:43:53.004
0.01	0	6.03	-0.03	0.1 00:12:44:08.004
0	0	6.02	-0.03	0.13 00:12:44:23.004
-0.01	0	6	-0.03	0.11 00:12:44:38.004

0	0	6.02	-0.03	0.13 00:12:44:53.004
0	0	6.03	-0.03	0.15 NOx Low
0	0	6.03	-0.03	0.12 00:12:45:23.004
0	0.01	6.03	-0.03	0.17 00:12:45:38.004
0	0.01	6.03	-0.03	0.17 00:12:45:53.004
0	0	6.01	-0.03	0.2 00:12:46:08.004
0	0	6.01	-0.03	0.21 00:12:46:23.004
0	0	6.03	-0.02	0.21 00:12:46:38.004
0	0	6.03	-0.02	0.21 00:12:46:53.004
-0.01	0	6.03	-0.03	0.17 00:12:47:08.004
0.02	0	6.11	-0.02	0.12 00:12:47:23.004
0	0	5.62	0.03	0.07 00:12:47:38.004
0	0	1.5	0.07	0.06 00:12:47:53.004
0	0	0.16	0.09	0.03 00:12:48:08.004
-0.01	0	0.14	0.13	-0.02 00:12:48:23.004
-0.01	0	0.13	0.27	0.01 00:12:48:38.004
-0.01	0	0.14	0.46	-0.03 00:12:48:53.004
-0.01	0	0.14	0.52	-0.04 00:12:49:08.004
-0.01	0	0.14	0.5	-0.03 00:12:49:23.004
-0.01	0	0.12	0.38	-0.09 00:12:49:38.004
-0.01	0	0.11	0.27	-0.08 00:12:49:53.004
-0.03	0	0.11	0.04	-0.06 00:12:50:08.004
0	0.04	0.09	-0.03	-0.01 00:12:50:23.004
0.02	0.06	0.09	0.33	-0.02 00:12:50:38.004
0	0.02	0.09	1.31	0 00:12:50:53.004
0.01	0.01	0.09	2.54	-0.07 00:12:51:08.004
0.01	0.01	0.09	4.78	-0.06 00:12:51:23.004
0.01	0	0.09	8.31	-0.05 00:12:51:38.004
0.02	0	0.09	11.31	-0.04 00:12:51:53.004
0.02	0	0.08	14.25	-0.04 00:12:52:08.004
0.02	0	0.07	15.92	-0.04 00:12:52:23.004
0.02	0	0.07	16.83	-0.08 00:12:52:38.004
0.02	0	0.08	17.14	-0.1 00:12:52:53.004
0	0	0.07	17.32	-0.1 00:12:53:08.004
-0.01	0	0.07	17.42	-0.1 00:12:53:23.004
-0.01	0	0.05	17.53	-0.12 00:12:53:38.004
-0.01	0	0.05	17.64	-0.08 00:12:53:53.004
-0.01	0	0.05	17.75	-0.07 00:12:54:08.004
-0.02	0	0.05	17.8	-0.1 00:12:54:23.004
-0.02	0	0.05	17.86	-0.12 00:12:54:38.004
-0.01	0	0.05	17.89	-0.13 00:12:54:53.004
-0.02	0	0.05	17.92	-0.12 00:12:55:08.004
-0.02	0	0.05	17.92	-0.17 00:12:55:23.004
-0.01	0	0.05	17.93	-0.17 00:12:55:38.004
-0.02	0	0.03	18.05	-0.15 00:12:55:53.004
-0.02	0	0.03	18.02	-0.12 00:12:56:08.004
-0.02	0	0.05	18.01	-0.12 CO High
-0.02	0	0.05	18.01	-0.16 00:12:56:38.004
0.01	0.01	0.05	18.2	-0.17 00:12:56:53.004

0.01	0	0.05	16.82	-0.21	00:12:57:08.004
0.01	0	0.05	13.06	-0.23	00:12:57:23.004
0.01	0	0.03	8.09	-0.21	00:12:57:38.004
0.01	0	0.03	3.99	-0.24	00:12:57:53.004
-0.02	0	0.03	1.35	-0.24	00:12:58:08.004
0.01	0	0.03	0.76	-0.26	00:12:58:23.004
0	0	0.04	2.19	-0.28	00:12:58:38.004
0.01	0	0.04	3.89	-0.3	00:12:58:53.004
0	0	0.03	5.12	-0.28	00:12:59:08.004
0	0	0.03	6.41	-0.27	00:12:59:23.004
0	0	0.03	7.48	-0.27	00:12:59:38.004
0	0	0.03	8.42	-0.26	00:12:59:53.004
0	0	0.03	9.22	-0.27	00:13:00:08.004
0	0	0.03	9.6	-0.26	00:13:00:23.004
0	0	0.04	9.75	-0.24	00:13:00:38.004
0	0	0.04	9.8	-0.27	00:13:00:53.004
0	0	0.03	9.82	-0.32	00:13:01:08.004
0.01	0	0.03	9.84	-0.33	00:13:01:23.004
0	0	0.03	9.93	-0.32	00:13:01:38.004
0	0	0.03	10.02	-0.36	00:13:01:53.004
0	0	0.03	10.02	-0.35	CO Mid
0	0	0.03	10.02	-0.35	00:13:02:23.004
-0.02	0	0.03	10.01	-0.36	00:13:02:38.004
-0.02	0	0.03	10.05	-0.34	00:13:02:53.004
-0.01	0	0.03	9.55	-0.31	00:13:03:08.004
-0.02	0	0.03	8.7	-0.31	00:13:03:23.004
-0.02	0	0.03	7.73	0	00:13:03:38.004
-0.02	0	0.04	6.91	-0.03	00:13:03:53.004
-0.02	0	0.03	6.34	-0.03	00:13:04:08.004
-0.02	0	0.03	6.11	-0.06	00:13:04:23.004
-0.02	0	0.03	6.05	-0.04	00:13:04:38.004
-0.02	0	0.01	6.03	-0.04	00:13:04:53.004
-0.02	0	0.01	6.02	-0.04	CO Low
-0.02	0	0.01	6.02	-0.01	00:13:05:23.004

GE-Energy & Environmental Research

CEMS Calibration

15 sec Averaged data

For 5-07-2001 @ 13:10:30.08

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
0.08	0.01	0.12	-0.01	-0.22	00:13:10:30.004
0.04	0.01	0.11	0	-0.23	00:13:10:45.004
0.03	0.01	0.13	0.01	-0.15	00:13:11:00.004
0.01	0.01	0.15	0.01	-0.05	00:13:11:15.004
0.02	0.01	0.17	0	-0.06	00:13:11:30.004
0.01	0.01	0.2	0	-0.04	00:13:11:45.004
0.01	0.01	0.21	0	-0.05	00:13:12:00.004
0.01	0.01	0.21	0	-0.05	00:13:12:15.004
-0.01	0.01	0.22	0	-0.01	00:13:12:30.004
-0.01	0.01	0.22	-0.01	0.01	00:13:12:45.004
0.01	0.01	0.22	0	0.01	00:13:13:00.004
4.07	0.11	0.22	-0.01	0	00:13:13:15.004
11.6	0.02	0.18	-0.03	0.04	00:13:13:30.004
11.86	0.01	0.14	-0.02	0.05	00:13:13:45.004
11.87	0.01	0.2	0	0.03	00:13:14:00.004
11.92	0.01	0.19	0	0.04	00:13:14:15.004
11.98	0.01	0.17	0	0.01	00:13:14:30.004
11.99	0.01	0.18	0	0.02	00:13:14:45.004
11.99	0.01	0.16	0	0.01	00:13:15:00.004
11.98	0.01	0.16	0	0.08	00:13:15:15.004
11.99	0.01	0.16	-0.01	0.04	00:13:15:30.004
10.16	1.77	0.16	0	0.06	00:13:15:45.004
0.79	7.65	0.16	0	0.03	00:13:16:00.004
0.05	7.88	0.16	0	0.02	00:13:16:15.004
0.02	8	0.15	0	0.01	00:13:16:30.004
0.01	8.01	0.16	-0.01	0.04	00:13:16:45.004
0	8.02	0.16	-0.03	-0.01	00:13:17:00.004
0	8.03	0.16	-0.01	-0.01	00:13:17:15.004
-0.01	8.03	0.14	-0.01	0	00:13:17:30.004
-0.01	8.04	0.14	-0.01	0.01	00:13:17:45.004
-0.01	8.04	0.14	0	0.01	00:13:18:00.004
-0.02	8.03	0.14	-0.03	0.01	00:13:18:15.004
-0.01	8.05	0.14	-0.01	0.03	00:13:18:30.004
0.03	4.78	0.14	0	0.02	00:13:18:45.004
0.02	0.22	1.54	0	0.01	00:13:19:00.004
0.02	0.09	4.14	0	0.03	00:13:19:15.004
0.01	0.06	7.92	-0.02	0.03	00:13:19:30.004
0.01	0.05	9.71	-0.03	0.04	00:13:19:45.004
0.02	0.04	9.75	-0.03	0.05	00:13:20:00.004
0.01	0.04	9.77	-0.02	0.08	00:13:20:15.004
0.01	0.03	9.98	0	0.08	00:13:20:30.004
0.01	0.03	10.08	0	0.1	00:13:20:45.004
0.02	0.02	9.99	0	0.1	00:13:21:00.004

0.01	0.02	10	0	0.11 00:13:21:15.004
0.01	0.02	10.01	0	0.05 00:13:21:30.004
0.02	0.02	10	0	0.03 00:13:21:45.004
0.01	0.02	9.99	0	0.01 00:13:22:00.004
0.01	0.02	10	0	-0.04 00:13:22:15.004
0.02	0.02	9.99	0	-0.02 00:13:22:30.004
0.01	0.02	10	-0.01	-0.02 00:13:22:45.004
0.01	0.02	10.01	-0.02	-0.06 00:13:23:00.004
0	0.01	9.99	0	-0.07 00:13:23:15.004
0.01	0.01	10.01	0.04	-0.09 00:13:23:30.004
0.01	0.01	10.01	0.18	-0.1 00:13:23:45.004
-0.02	0.02	10.01	0.23	-0.1 00:13:24:00.004
-0.02	0.02	8.63	2.18	-0.1 00:13:24:15.004
0.45	0.02	2.61	4.13	-0.08 00:13:24:30.004
3.84	0.02	0.58	3.8	-0.06 00:13:24:45.004
5.28	0.02	0.39	2.45	-0.07 00:13:25:00.004
2	0.03	0.85	0.87	-0.08 00:13:25:15.004
0.11	0.05	4.92	0.35	-0.11 00:13:25:30.004
0.2	0.02	3.72	0.18	-0.07 00:13:25:45.004
0.15	0.02	0.31	0.16	-0.08 00:13:26:00.004
0.07	0.02	0.05	0.17	-0.12 00:13:26:15.004
0.04	0.02	0.06	0.14	-0.1 00:13:26:30.004
0.03	0.01	0.05	0.14	-0.12 00:13:26:45.004
0.02	0.01	0.05	0.14	-0.13 00:13:27:00.004
0.02	0.01	0.03	0.15	-0.14 00:13:27:15.004
0.01	0.01	0.03	0.68	-0.18 00:13:27:30.004
0.01	0.01	0.03	3.34	-0.21 00:13:27:45.004
0.01	0.02	0.03	5.12	-0.25 00:13:28:00.004
0.01	0.01	0.04	6.6	-0.28 00:13:28:15.004
0	0.01	0.03	8.38	-0.3 00:13:28:30.004
0	0.01	0.04	10.28	-0.35 00:13:28:45.004
0	0.01	0.03	10.89	-0.33 00:13:29:00.004
0	0.01	0.04	10.51	-0.36 00:13:29:15.004
-0.01	0.01	0.03	10.16	-0.35 00:13:29:30.004
0	0.01	0.03	10.19	-0.36 00:13:29:45.004
0	0.01	0.03	10.02	-0.3 00:13:30:00.004
-0.01	0.01	0.03	9.81	-0.33 00:13:30:15.004
0	0.01	0.03	9.43	-0.35 00:13:30:30.004
-0.01	0.01	0.04	9.6	-0.38 00:13:30:45.004
-0.01	0.01	0.04	9.97	-0.41 00:13:31:00.004
0	0.01	0.03	10.16	-0.43 00:13:31:15.004
0	0.01	0.03	9.95	-0.47 00:13:31:30.004
0	0.01	0.03	9.98	-0.46 00:13:31:45.004
0	0.02	0.04	10.02	-0.45 00:13:32:00.004
0	0.02	0.03	10	-0.45 00:13:32:15.004
0	0.02	0.03	10.02	-0.46 00:13:32:30.004
0	0.02	0.03	10.02	-0.1 00:13:32:45.004
0.01	0.02	0.03	10.02	-0.13 00:13:33:00.004
0.01	0.02	0.03	9.44	-0.13 00:13:33:15.004

0.01	0.03	0.03	7.7	-0.09 00:13:33:30.004
0.01	0.03	0.03	5.25	-0.07 00:13:33:45.004
0.01	0.03	0.03	3.44	-1.69 00:13:34:00.004
0.01	0.03	0.03	1.69	-3.65 00:13:34:15.004
0	0.03	0.04	0.81	-9.28 00:13:34:30.004
-0.01	0.03	0.03	0.23	-10.35 00:13:34:45.004
0.08	0.04	0.04	0.05	-10.54 00:13:35:00.004
0.03	0.03	0.03	-0.01	-9.11 00:13:35:15.004
0.01	0.03	0.03	-0.03	-10.05 00:13:35:30.004
0	0.03	0.03	-0.03	-9.8 00:13:35:45.004
0	0.03	0.03	-0.03	-9.14 00:13:36:00.004
0	0.03	0.03	-0.03	-7.26 00:13:36:15.004
0.01	0.02	0.03	-0.02	-3.8 00:13:36:30.004
0.02	0.03	0.03	-0.03	-1.69 00:13:36:45.004
0.03	0.03	0.03	-0.03	0.8 00:13:37:00.004
0.03	0.03	0.03	-0.03	4.06 00:13:37:15.004
0.01	0.03	0.03	-0.03	-5.36 00:13:37:30.004
0.09	0.04	0.04	-0.03	-6.53 00:13:37:45.004
0.02	0.03	0.03	-0.03	-6.13 00:13:38:00.004
0.04	0.03	0.03	-0.03	-6.23 00:13:38:15.004
0.07	0.04	0.02	-0.03	-6.81 00:13:38:30.004
0.09	0.04	0.02	-0.03	-6.51 00:13:38:45.004
0.05	0.04	0.02	-0.03	-4.96 00:13:39:00.004
0.03	0.04	0.01	-0.03	-0.23 00:13:39:15.004
0.04	0.03	0.01	-0.02	-0.09 00:13:39:30.004
0.03	0.04	0.01	-0.03	-0.01 00:13:39:45.004
0.04	0.03	0.01	-0.03	0.02 00:13:40:00.004
0.04	0.04	0.02	-0.01	0.04 00:13:40:15.004
0.04	0.04	0.01	-0.03	0.06 00:13:40:30.004
0.05	0.04	0.01	-0.03	0.06 00:13:40:45.004
0.04	0.04	0.02	-0.03	0.08 00:13:41:00.004
0.04	0.04	0.01	-0.03	0.13 00:13:41:15.004
0.05	0.04	0.02	-0.03	0.14 00:13:41:30.004
0.05	0.04	0.01	-0.02	0.14 00:13:41:45.004
0.05	0.04	0.01	0	0.17 00:13:42:00.004
0.05	0.04	0.02	-0.01	0.15 00:13:42:15.004
0.05	0.04	0.02	-0.03	0.17 00:13:42:30.004
0.05	0.04	0.01	-0.02	0.19 00:13:42:45.004
0.06	0.04	0.01	0	-0.06 00:13:43:00.004
0.06	0.04	0.02	0	0.09 00:13:43:15.004
0.06	0.04	0.02	0	0.18 00:13:43:30.004
0.06	0.04	0.01	0	-0.14 00:13:43:45.004
0.06	0.04	0.02	0	3.33 00:13:44:00.004
0.07	0.04	0.01	0	1.97 00:13:44:15.004
0.1	0.05	0.01	0	19.35 00:13:44:30.004
0.1	0.05	0.01	0	21.31 00:13:44:45.004
0.12	0.05	0.01	0	19.9 00:13:45:00.004
0.16	0.05	0.02	0	12.2 00:13:45:15.004
0.25	0.06	0.03	0	13.39 00:13:45:30.004

0.17	0.04	0.01	0	16.83 00:13:45:45.004
0.22	0.04	0.02	0	17.02 00:13:46:00.004
0.24	0.04	0.01	0	9.02 00:13:46:15.004
0.31	0.04	0.01	0	13.5 00:13:46:30.004
0.37	0.05	0.02	0	18.7 00:13:46:45.004
0.44	0.04	0.01	0	18.23 00:13:47:00.004
0.51	0.04	0.01	0	18.01 00:13:47:15.004
0.57	0.04	0.01	0	18.09 00:13:47:30.004
0.63	0.04	0.01	0	18.03 00:13:47:45.004
0.7	0.04	0.01	0	18.03 00:13:48:00.004
0.76	0.04	0.01	-0.02	18.06 00:13:48:15.004
0.86	0.04	0.01	0	18.04 00:13:48:30.004
1.07	0.04	0.02	-0.01	18 00:13:48:45.004
1.51	0.04	0.01	-0.02	18.03 00:13:49:00.004
2.21	0.05	0.01	0	18.1 00:13:49:15.004
3.19	0.05	0.02	0	18.07 00:13:49:30.004
4.34	0.05	0	-0.03	15.78 00:13:49:45.004
5.59	0.05	-0.01	-0.01	10.78 00:13:50:00.004
6.9	0.05	-0.01	-0.02	9.62 00:13:50:15.004
8.19	0.06	0	0	9.98 00:13:50:30.004
9.43	0.06	-0.01	0	9.98 00:13:50:45.004
10.59	0.06	-0.01	0	9.97 00:13:51:00.004
11.65	0.06	-0.01	0	9.97 00:13:51:15.004
12.63	0.06	-0.01	-0.02	9.99 00:13:51:30.004
13.53	0.06	-0.01	0	9.99 00:13:51:45.004
14.32	0.07	-0.01	-0.02	10.02 00:13:52:00.004
15.04	0.07	0.01	0	9.98 00:13:52:15.004
15.68	0.06	0.01	0	10 00:13:52:30.004
16.24	0.07	0.01	-0.03	10 00:13:52:45.004
16.71	0.06	0.01	-0.02	10 00:13:53:00.004
17.13	0.06	0.01	-0.01	8.49 00:13:53:15.004
17.52	0.06	0.01	-0.01	8.12 00:13:53:30.004
17.85	0.06	0.01	-0.01	8.12 00:13:53:45.004
18.13	0.06	0.01	-0.03	6.41 00:13:54:00.004
18.39	0.06	0.02	0	6.12 00:13:54:15.004
18.62	0.06	0.01	0	6.04 00:13:54:30.004
18.82	0.06	0.01	0	6.04 00:13:54:45.004
19.01	0.06	0.01	-0.02	6.04 00:13:55:00.004
19.15	0.06	0.01	0	6 00:13:55:15.004
19.28	0.06	0.01	-0.02	5.96 00:13:55:30.004
19.41	0.07	0.01	-0.02	6.03 00:13:55:45.004
19.52	0.06	0.01	-0.01	6 00:13:56:00.004
19.62	0.06	0.02	0	6.09 00:13:56:15.004
19.72	0.07	0.01	0	6 00:13:56:30.004

Energy & Environmental Research

Run 8A-100-1

1 minute averaged data

For 5-07-2001 @ 17:25:15.79

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
13.72	4.22	9.48	0.22	0.22	0 00:17:25:15.004
13.73	4.22	9.49	0.23	0.23	-0.04 00:17:26:15.004
13.73	4.22	9.53	0.23	0.23	-0.1 00:17:27:15.004
13.73	4.22	9.52	0.23	0.23	-0.14 00:17:28:15.004
13.73	4.23	9.55	0.23	0.23	-0.15 00:17:29:15.004
13.73	4.22	9.55	0.23	0.23	-0.19 00:17:30:15.004
13.73	4.22	9.55	0.23	0.23	-0.08 00:17:31:15.004
13.72	4.22	9.55	0.23	0.23	0.01 00:17:32:15.004
13.73	4.22	9.55	0.23	0.23	-0.04 00:17:33:15.004
13.73	4.22	9.55	0.23	0.23	-0.07 00:17:34:15.004
13.72	4.23	9.54	0.23	0.23	-0.09 00:17:35:15.004
13.73	4.23	9.53	0.23	0.23	-0.13 00:17:36:15.004
13.72	4.23	9.52	0.23	0.23	-0.13 00:17:37:15.004
13.73	4.23	9.52	0.23	0.23	-0.04 00:17:38:15.004
13.73	4.22	9.5	0.23	0.23	-0.02 00:17:39:15.004
13.72	4.23	9.49	0.23	0.23	-0.17 00:17:40:15.004
13.74	4.25	9.51	0.24	0.24	-1.18 00:17:41:15.004
13.72	4.23	9.52	0.23	0.23	-0.06 00:17:42:15.004
13.72	4.23	9.53	0.23	0.23	-0.13 00:17:43:15.004
13.72	4.23	9.6	0.24	0.24	-0.12 00:17:44:15.004
13.72	4.24	9.62	0.24	0.24	-0.13 00:17:45:15.004
13.72	4.24	9.62	0.23	0.23	0 00:17:46:15.004
13.72	4.24	9.62	0.24	0.24	-0.03 00:17:47:15.004
13.71	4.24	9.73	0.24	0.24	-0.06 00:17:48:15.004
13.72	4.24	9.74	0.24	0.24	-0.04 00:17:49:15.004
13.72	4.24	9.58	0.24	0.24	-0.04 00:17:50:15.004
13.72	4.24	9.54	0.24	0.24	-0.05 00:17:51:15.004
13.72	4.24	9.52	0.24	0.24	-0.05 00:17:52:15.004
13.72	4.24	9.5	0.23	0.23	-0.06 00:17:53:15.004
13.72	4.24	9.51	0.24	0.24	-0.09 00:17:54:15.004
13.72	4.25	9.46	0.24	0.24	-0.1 00:17:55:15.004
13.72	4.25	9.46	0.24	0.24	-0.09 00:17:56:15.004
13.72	4.25	9.46	0.23	0.23	-0.08 00:17:57:15.004
13.72	4.24	9.47	0.24	0.24	-0.09 00:17:58:15.004
13.72	4.24	9.47	0.23	0.23	-0.1 00:17:59:15.004
13.72	4.25	9.52	0.24	0.24	-0.1 00:18:00:15.004
13.72	4.25	9.55	0.24	0.24	-0.11 00:18:01:15.004
13.72	4.25	9.58	0.24	0.24	-0.13 00:18:02:15.004
13.72	4.25	9.57	0.24	0.24	-0.14 00:18:03:15.004
13.72	4.25	9.6	0.24	0.24	-0.15 00:18:04:15.004
13.72	4.25	9.55	0.24	0.24	-0.03 00:18:05:15.004
13.72	4.25	9.52	0.24	0.24	-0.03 00:18:06:15.004
13.72	4.25	9.5	0.24	0.24	-0.01 00:18:07:15.004

13.72	4.25	9.48	0.24	-0.06 00:18:08:15.004
13.71	4.25	9.46	0.24	-0.07 00:18:09:15.004
13.71	4.25	9.48	0.24	-0.11 00:18:10:15.004
13.71	4.25	9.49	0.24	-0.16 00:18:11:15.004
13.71	4.26	9.51	0.24	-0.2 00:18:12:15.004
13.71	4.25	9.49	0.24	-0.19 00:18:13:15.000
13.71	4.25	9.53	0.24	-0.24 00:18:14:15.000
13.71	4.26	9.53	0.24	-0.21 00:18:15:15.000
13.71	4.26	9.57	0.24	-0.18 00:18:16:15.000
13.71	4.26	9.58	0.24	-0.02 00:18:17:15.000
13.71	4.26	9.61	0.24	-0.01 00:18:18:15.000
13.71	4.26	9.63	0.24	0 00:18:19:15.000
13.71	4.26	9.62	0.24	-0.02 00:18:20:15.000
13.71	4.26	9.63	0.24	-0.04 00:18:21:15.000
13.71	4.26	9.6	0.24	-0.09 00:18:22:15.000
13.71	4.26	9.65	0.24	-0.09 00:18:23:15.000
13.71	4.26	9.59	0.24	-0.09 00:18:24:15.000
13.71	4.25	9.54	0.25	-0.12 00:18:25:15.000
13.7	4.2	9.5	0.2	-0.1 Average

GE-Energy & Environmental Research

Post 8A-100-1 Pre 8A-100-2

15 sec Averaged data

For 5-07-2001 @ 18:32:17.87

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
0.11	0.04	6.54	0.14	-0.06	00:18:32:17.000
0.07	0.03	4.56	0.06	-0.04	00:18:32:32.000
0.04	0.03	0.68	0.04	-0.04	00:18:32:47.000
0.03	0.02	0.26	0.04	-0.01	00:18:33:02.000
0.03	0.02	0.24	0.04	-0.02	00:18:33:17.000
0.03	0.02	0.23	0.04	0	00:18:33:32.000
0.01	0.02	0.21	0.04	0.01	00:18:33:47.000
0.03	0.03	0.21	0.06	0.01	00:18:34:02.000
0.08	0.03	0.2	0.06	0.02	00:18:34:17.000
9.23	0.07	0.19	0.05	0.01	00:18:34:32.000
11.96	0.02	0.17	0.05	0	00:18:34:47.000
12.01	0.02	0.21	0.06	0.02	00:18:35:02.000
12.03	0.02	0.16	0.06	0.03	00:18:35:17.000
12.03	0.01	0.13	0.04	0	00:18:35:32.000
12.04	0.01	0.11	0.06	0.02	00:18:35:47.000
12.02	0.01	0.11	0.06	0.01	00:18:36:02.000
12.05	0.01	0.1	0.06	-0.03	00:18:36:17.000
12.04	0.01	0.09	0.06	-0.03	O2
12.02	0.02	0.09	0.06	-0.04	00:18:36:47.000
12.04	0.02	0.09	0.06	-0.05	00:18:37:02.000
8.16	3.32	0.09	0.04	-0.03	00:18:37:17.000
0.28	7.93	0.08	0.05	-0.04	00:18:37:32.000
0.04	8.01	0.07	0.04	-0.02	00:18:37:47.000
0.02	8.04	0.07	0.04	0.01	00:18:38:02.000
0.01	8.05	0.07	0.04	0.03	00:18:38:17.000
0.01	8.06	0.07	0.06	0.02	00:18:38:32.000
0	8.06	0.07	0.05	0.02	CO2
-0.01	8.06	0.07	0.06	0.04	00:18:39:02.000
0	8.07	0.07	0.05	0.02	00:18:39:17.000
-0.01	8.06	0.07	0.06	0.04	00:18:39:32.000
-0.01	8.05	0.05	0.06	0.04	00:18:39:47.000
0	8.07	0.05	0.06	0.06	00:18:40:02.000
0.1	2.24	0.19	0.06	0.05	00:18:40:17.000
0.03	0.14	1.88	0.06	0.07	00:18:40:32.000
0.02	0.08	4.95	0.06	0.06	00:18:40:47.000
0.02	0.06	9.25	0.05	0.06	00:18:41:02.000
0.02	0.05	10.15	0.06	0.04	00:18:41:17.000
0.01	0.04	10.18	0.05	0	00:18:41:32.000
0.01	0.04	10.19	0.07	0.01	00:18:41:47.000
0.01	0.03	10.16	0.06	0	00:18:42:02.000
0.01	0.03	10.15	0.06	0.01	00:18:42:17.000
0.02	0.03	10.15	0.06	0.04	00:18:42:32.000
0.02	0.02	10.15	0.07	0.01	00:18:42:47.000

0.01	0.02	10.15	0.06	0.05 NOx
0.01	0.02	10.15	0.06	0.02 00:18:43:17.000
0.01	0.02	10.15	0.06	0.01 00:18:43:32.000
0.01	0.02	10.15	0.08	-0.02 00:18:43:47.000
0	0.03	10.15	0.07	-0.03 00:18:44:02.000
-0.02	0.02	10.22	0.07	-0.03 00:18:44:17.000
-0.01	0.02	10.58	0.06	-0.05 00:18:44:32.000
-0.02	0.02	8.28	0.08	-0.08 00:18:44:47.000
-0.01	0.03	1.52	0.18	-0.06 00:18:45:02.000
-0.01	0.04	0	0.35	-0.04 00:18:45:17.000
-0.01	0.04	-0.01	0.48	-0.04 00:18:45:32.000
0	0.08	-0.01	0.54	-0.04 00:18:45:47.000
0.01	0.13	-0.02	0.55	-0.06 00:18:46:02.000
0.01	0.31	-0.02	0.52	-0.04 00:18:46:17.000
0.03	1.09	-0.03	0.57	-0.5 00:18:46:32.000
0.1	2.15	-0.03	0.68	-0.36 00:18:46:47.000
0.68	2.86	-0.03	0.83	-0.05 00:18:47:02.000
2.14	3.3	-0.02	0.89	-0.07 00:18:47:17.000
4.05	3.53	-0.03	0.92	-0.08 00:18:47:32.000
5.93	3.63	-0.03	0.91	-0.05 00:18:47:47.000
7.56	3.67	-0.03	1.27	-0.05 00:18:48:02.000
8.88	3.73	-0.02	2.26	-0.04 00:18:48:17.000
9.93	3.79	-0.02	3.43	-0.03 00:18:48:32.000
10.75	3.82	-0.03	4.1	-0.01 00:18:48:47.000
11.4	3.75	-0.03	4.42	-0.01 00:18:49:02.000
11.87	3.42	-0.03	4.33	-0.02 00:18:49:17.000
11.95	2.79	-0.02	4.29	-0.01 00:18:49:32.000
11.33	2.1	-0.03	4.59	0 00:18:49:47.000
10.09	1.47	-0.03	5.4	0 00:18:50:02.000
8.57	1.02	-0.02	6.28	-0.02 00:18:50:17.000
7.06	0.77	-0.03	7.35	-0.01 00:18:50:32.000
5.89	0.59	-0.02	8.12	-0.01 00:18:50:47.000
5.42	0.48	-0.03	8.88	-0.03 00:18:51:02.000
5.36	0.42	-0.03	9.28	-0.03 00:18:51:17.000
5.1	0.37	-0.03	9.65	-0.02 00:18:51:32.000
4.52	0.33	-0.02	9.84	-0.04 00:18:51:47.000
3.82	0.31	-0.03	10.01	-0.07 00:18:52:02.000
3.09	0.28	-0.02	10.07	-0.04 00:18:52:17.000
2.48	0.26	-0.03	10.16	-0.05 00:18:52:32.000
1.97	0.25	-0.03	10.15	-0.06 00:18:52:47.000
1.56	0.24	-0.03	10.15	-0.04 00:18:53:02.000
1.24	0.23	-0.03	10.14	-0.04 00:18:53:17.000
0.99	0.22	-0.03	10.13	-0.05 00:18:53:32.000
0.8	0.22	-0.03	10.04	-0.05 00:18:53:47.000
0.66	0.21	-0.03	10.05	-0.08 00:18:54:02.000
0.53	0.2	-0.03	10.07	-0.06 CO
0.44	0.2	-0.03	10.07	-0.08 00:18:54:32.000
0.37	0.19	-0.03	9.93	-0.09 00:18:54:47.000
0.29	0.18	-0.03	8.23	-0.11 00:18:55:02.000

0.24	0.18	-0.03	6.24	-0.12	00:18:55:17.000
0.21	0.17	-0.03	3.87	-0.14	00:18:55:32.000
0.19	0.17	-0.02	2.32	-0.6	00:18:55:47.000
0.18	0.16	-0.03	1.04	-1.16	00:18:56:02.000
0.17	0.16	-0.03	0.47	-0.09	00:18:56:17.000
0.16	0.16	-0.03	0.15	-0.09	00:18:56:32.000
0.15	0.16	-0.03	0.08	-0.13	00:18:56:47.000
0.15	0.16	-0.03	0.06	-0.16	00:18:57:02.000
0.15	0.17	-0.03	0.06	-0.2	00:18:57:17.000
0.15	0.17	-0.03	0.06	-0.14	00:18:57:32.000
0.14	0.16	-0.02	0.08	-0.05	00:18:57:47.000
0.15	0.16	-0.03	0.06	-0.06	00:18:58:02.000
0.15	0.16	-0.03	0.06	2.13	00:18:58:17.000
0.17	0.16	-0.03	0.06	10.33	00:18:58:32.000
0.17	0.16	-0.03	0.06	10	00:18:58:47.000
0.17	0.16	-0.03	0.06	10.03	00:18:59:02.000
0.17	0.15	-0.02	0.07	10.03	00:18:59:17.000
0.16	0.16	-0.03	0.08	10.01	THC
0.17	0.16	-0.02	0.08	10.02	00:18:59:47.000
0.17	0.16	-0.02	0.08	10.01	00:19:00:02.000
0.17	0.15	-0.03	0.08	10.03	00:19:00:17.000

Energy & Environmental Research

Run 8A-100-2

1 minute averaged data

For 5-07-2001 @ 19:10:04.54

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
13.73	4.25	9.77	0.28	0.06	00:19:10:04.000
13.73	4.25	9.76	0.27	0	00:19:11:04.000
13.73	4.25	9.8	0.27	-0.02	00:19:12:04.000
13.73	4.26	9.83	0.27	-0.02	00:19:13:04.000
13.73	4.26	9.87	0.27	-0.03	00:19:14:04.000
13.73	4.26	9.88	0.27	-0.05	00:19:15:04.000
13.73	4.26	9.88	0.27	-0.07	00:19:16:04.000
13.73	4.26	9.82	0.27	-0.07	00:19:17:04.000
13.73	4.26	9.83	0.27	-0.08	00:19:18:04.000
13.73	4.26	9.81	0.27	-0.07	00:19:19:04.000
13.73	4.27	9.79	0.27	-0.08	00:19:20:04.000
13.73	4.26	9.82	0.27	-0.09	00:19:21:04.000
13.73	4.26	9.8	0.27	-0.09	00:19:22:04.000
13.73	4.27	9.8	0.28	-0.09	00:19:23:04.000
13.73	4.27	9.85	0.28	-0.1	00:19:24:04.000
13.73	4.26	9.79	0.27	-0.11	00:19:25:04.000
13.73	4.27	9.81	0.28	-0.12	00:19:26:04.000
13.73	4.27	9.79	0.28	-0.13	00:19:27:04.000
13.73	4.27	9.8	0.27	-0.1	00:19:28:04.000
13.73	4.27	9.76	0.28	0.07	00:19:29:04.000
13.73	4.27	9.76	0.28	0.07	00:19:30:04.000
13.73	4.27	9.74	0.28	0.06	00:19:31:04.000
13.73	4.27	9.72	0.28	0.06	00:19:32:04.000
13.73	4.27	9.74	0.28	0.03	00:19:33:04.000
13.72	4.27	9.74	0.28	0.03	00:19:34:04.000
13.73	4.27	9.76	0.28	0.02	00:19:35:04.000
13.72	4.27	9.77	0.28	0	00:19:36:04.000
13.72	4.28	9.79	0.28	0.01	00:19:37:04.000
13.72	4.28	9.81	0.28	0	00:19:38:04.000
13.72	4.28	9.84	0.28	0	00:19:39:04.000
13.72	4.28	9.82	0.28	-0.01	00:19:40:04.000
13.72	4.29	9.77	0.28	-0.03	00:19:41:04.000
13.73	4.28	9.79	0.28	-0.04	00:19:42:04.000
13.72	4.28	9.78	0.28	-0.04	00:19:43:04.000
13.72	4.28	9.79	0.28	-0.06	00:19:44:04.000
13.72	4.28	9.75	0.28	-0.07	00:19:45:04.000
13.73	4.28	9.76	0.29	-0.08	00:19:46:04.000
13.72	4.28	9.76	0.29	-0.09	00:19:47:04.000
13.72	4.29	9.73	0.29	-0.1	00:19:48:04.000
13.72	4.28	9.77	0.29	-0.11	00:19:49:04.000
13.73	4.28	9.74	0.29	-0.11	00:19:50:04.000
13.72	4.29	9.76	0.29	-0.11	00:19:51:04.000
13.72	4.29	9.78	0.28	-0.09	00:19:52:04.000

13.72	4.29	9.78	0.29	0.02	00:19:53:04.000
13.72	4.29	9.77	0.29	0.02	00:19:54:04.000
13.72	4.29	9.77	0.29	0.01	00:19:55:04.000
13.72	4.29	9.78	0.29	0.01	00:19:56:04.000
13.72	4.29	9.78	0.29	0.01	00:19:57:04.000
13.72	4.29	9.79	0.29	-0.01	00:19:58:04.000
13.72	4.29	9.83	0.29	-0.01	00:19:59:04.000
13.72	4.3	9.83	0.29	-0.02	00:20:00:04.000
13.72	4.3	9.82	0.3	-0.05	00:20:01:04.000
13.72	4.29	9.84	0.3	-0.05	00:20:02:04.000
13.72	4.29	9.85	0.3	-0.05	00:20:03:04.000
13.72	4.3	9.84	0.3	-0.06	00:20:04:04.000
13.71	4.3	9.84	0.3	-0.07	00:20:05:04.000
13.72	4.29	9.84	0.3	-0.08	00:20:06:04.000
13.72	4.3	9.86	0.3	-0.07	00:20:07:04.000
13.71	4.3	9.85	0.3	-0.08	00:20:08:04.000
13.72	4.3	9.87	0.3	-0.08	00:20:09:04.000
13.72	4.3	9.81	0.3	-0.08	00:20:10:04.000

13.72426 4.277869 9.798033 0.283279 -0.04082 Average

GE-Energy & Environmental Research

Post 8A-100-2 Pre 8A-100-3

15 sec Averaged data

For 5-07-2001 @ 20:12:11.07

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
0.14	0.07	9.19	0.14	-0.09	00:20:12:11.000
0.08	0.06	6.64	0.12	-0.1	00:20:12:26.000
0.06	0.05	1.42	0.12	-0.09	00:20:12:41.000
0.05	0.04	0.31	0.13	-0.1	00:20:12:56.000
0.05	0.04	0.28	0.14	-0.09	00:20:13:11.000
0.05	0.04	0.26	0.16	-0.1	00:20:13:26.000
0.04	0.04	0.26	0.06	-0.1	00:20:13:41.000
0.04	0.04	0.24	0	-0.08	00:20:13:56.000
0.04	0.03	0.23	0	-0.1	Zero
0.04	0.04	0.22	0	-0.1	00:20:14:26.000
0.04	0.03	0.21	0	-0.1	00:20:14:41.000
0.04	0.04	0.19	0.01	-0.09	00:20:14:56.000
0.04	0.03	0.18	0.01	-0.08	00:20:15:11.000
0.04	0.03	0.17	0	-0.1	00:20:15:26.000
0.04	0.03	0.16	0	-0.08	00:20:15:41.000
0.04	0.04	0.16	0	-0.1	00:20:15:56.000
0.04	0.04	0.15	0	-0.07	00:20:16:11.000
0.02	0.04	0.14	0	-0.08	00:20:16:26.000
0.04	0.04	0.14	0	-0.08	00:20:16:41.000
0.36	0.07	0.14	0	-0.09	00:20:16:56.000
10.22	0.07	0.11	0	-0.11	00:20:17:11.000
12.06	0.03	0.09	0	-0.09	00:20:17:26.000
12.1	0.03	0.17	0	-0.1	O2
12.11	0.03	0.13	0	-0.09	00:20:17:56.000
12.08	0.04	0.08	0	-0.09	00:20:18:11.000
12.12	0.03	0.08	-0.01	-0.11	00:20:18:26.000
6.3	4.7	0.08	0	-0.13	00:20:18:41.000
0.17	8.02	0.08	0	-0.12	00:20:18:56.000
0.05	8.08	0.08	0	-0.12	00:20:19:11.000
0.04	8.1	0.08	0	-0.12	00:20:19:26.000
0.03	8.1	0.08	0	-0.12	CO2
0.02	8.1	0.08	0	-0.11	00:20:19:56.000
0.01	8.08	0.08	0	-0.13	00:20:20:11.000
0.03	8.08	0.06	0	-0.11	00:20:20:26.000
0.04	7.22	0.05	0	-0.12	00:20:20:41.000
0.07	0.71	0.55	0	-0.11	00:20:20:56.000
0.05	0.13	3.8	0	-0.11	00:20:21:11.000
0.04	0.09	7.47	0.01	-0.12	00:20:21:26.000
0.04	0.07	9.82	0.01	-0.12	00:20:21:41.000
0.04	0.06	10.26	0	-0.12	00:20:21:56.000
0.03	0.05	10.07	0	-0.12	00:20:22:11.000
0.04	0.05	10.01	0.01	-0.12	00:20:22:26.000
0.03	0.04	9.99	0.02	-0.14	00:20:22:41.000

0.04	0.04	10.01	0.01	-0.13 NOx Zero
0.04	0.04	10.01	0.02	-0.14 00:20:23:11.000
0.04	0.04	10.01	0.02	-0.14 00:20:23:26.000
0.04	0.04	9.98	0	-0.12 00:20:23:41.000
0	0.04	9.88	0.01	-0.14 00:20:23:56.000
0	0.04	5.12	0.01	-0.13 00:20:24:11.000
0	0.04	0.15	0	-0.16 00:20:24:26.000
0.01	0.05	-0.02	0.01	-0.16 00:20:24:41.000
0.01	0.06	-0.03	0.02	-0.16 00:20:24:56.000
0.01	0.08	-0.02	0.02	-0.12 00:20:25:11.000
0.03	0.15	-0.02	0.01	-0.17 NOx Zero
0.04	0.74	-0.02	0.02	-0.17 00:20:25:41.000
0.68	2.59	-0.03	0.01	-0.18 00:20:25:56.000
3.89	3.58	-0.03	0.01	-0.19 00:20:26:11.000
7.52	3.88	-0.03	0.02	-0.19 00:20:26:26.000
9.99	3.98	-0.02	0	-0.17 00:20:26:41.000
11.5	4	-0.02	0	-0.19 00:20:26:56.000
12.39	3.29	-0.02	0.01	-0.18 00:20:27:11.000
12.39	1.69	-0.02	0.02	-0.18 00:20:27:26.000
10.01	0.75	-0.02	0.01	-0.19 00:20:27:41.000
6.54	0.42	-0.02	0	-0.18 00:20:27:56.000
3.93	0.3	-0.02	0.02	-0.19 00:20:28:11.000
2.43	0.25	-0.02	0.03	-0.2 00:20:28:26.000
1.76	0.23	-0.02	0.46	-0.2 00:20:28:41.000
1.36	0.22	-0.02	1.93	-0.19 00:20:28:56.000
1.08	0.21	-0.03	3.67	-0.21 00:20:29:11.000
0.85	0.2	-0.03	4.59	-0.18 00:20:29:26.000
0.66	0.19	-0.03	5.26	0.01 00:20:29:41.000
0.5	0.19	-0.03	5.88	0.01 00:20:29:56.000
0.39	0.19	-0.02	6.8	0 00:20:30:11.000
0.31	0.21	-0.02	7.82	-0.01 00:20:30:26.000
0.24	0.21	-0.02	8.85	-0.01 00:20:30:41.000
0.21	0.21	-0.02	9.43	0 00:20:30:56.000
0.18	0.21	-0.03	9.78	-0.01 00:20:31:11.000
0.16	0.2	-0.02	9.91	-0.01 00:20:31:26.000
0.15	0.2	-0.02	9.99	0 00:20:31:41.000
0.14	0.19	-0.02	10	0 00:20:31:56.000
0.13	0.19	-0.03	10.03	0.01 00:20:32:11.000
0.11	0.18	-0.02	10.06	0.01 00:20:32:26.000
0.11	0.18	-0.03	10.06	0.02 00:20:32:41.000
0.11	0.17	-0.02	10	0.01 CO
0.09	0.17	-0.02	10	0 00:20:33:11.000
0.09	0.16	-0.02	9.98	0 00:20:33:26.000
0.09	0.16	-0.02	9.99	-0.01 00:20:33:41.000
0.09	0.15	-0.02	10	-0.03 00:20:33:56.000
0.09	0.16	-0.02	10	-0.03 00:20:34:11.000
0.08	0.14	-0.03	9.99	-0.02 00:20:34:26.000
0.15	0.16	-0.02	9.98	0 00:20:34:41.000
0.23	0.26	-0.03	9.44	0.19 00:20:34:56.000

0.44	0.62	-0.02	7.32	6.34	00:20:35:11.000
0.91	1.21	-0.02	5.23	4.06	00:20:35:26.000
1.73	1.75	-0.03	3.02	3	00:20:35:41.000
2.75	2.05	-0.02	1.59	1.35	00:20:35:56.000
3.77	2.13	-0.02	0.66	-0.05	00:20:36:11.000
4.63	2.14	-0.02	0.23	-0.06	00:20:36:26.000
5.28	2.13	-0.02	0.07	-0.03	00:20:36:41.000
5.74	2.1	-0.03	0.02	-0.05	00:20:36:56.000
6.05	2.07	-0.02	0.02	-0.08	00:20:37:11.000
6.25	2.04	-0.02	0.02	-0.08	00:20:37:26.000
6.38	2.04	-0.02	0.01	-0.08	00:20:37:41.000
6.46	2.04	-0.03	0.02	-0.09	00:20:37:56.000
6.51	2.04	-0.02	0.02	-0.09	00:20:38:11.000
6.55	2.05	-0.02	0.02	-0.09	00:20:38:26.000
6.58	2.05	-0.02	0.02	-0.1	00:20:38:41.000
6.61	2.05	-0.02	0.02	-0.09	00:20:38:56.000
6.62	2.05	-0.02	0.03	-0.1	00:20:39:11.000
6.63	2.05	-0.02	0.02	-0.11	00:20:39:26.000
6.64	2.04	-0.02	0.02	-0.1	00:20:39:41.000
6.64	2.04	-0.02	0.02	-0.1	00:20:39:56.000
6.66	2.03	-0.03	0.04	2.75	00:20:40:11.000
6.67	2.03	-0.02	0.02	10.08	00:20:40:26.000
6.67	2.03	-0.02	0.02	10.08	00:20:40:41.000
6.67	2.03	-0.02	0.03	10.01	00:20:40:56.000
6.67	2.02	-0.03	0.02	10.03	THC
6.67	2.02	-0.02	0.02	10.03	00:20:41:26.000
6.67	2.01	-0.02	0.03	10.04	00:20:41:41.000
6.68	2.02	-0.02	0.02	10.03	00:20:41:56.000

Energy & Environmental Research

Run 8A-100-3

1 minute averaged data

For 5-07-2001 @ 20:50:09.98

O2	CO2	NO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppmv	ppm	ppm	HH:MM:SS
13.73	4.3	0.75	9.52	0.25	-0.07	00:20:50:09.000
13.73	4.29	0.8	9.54	0.25	-0.09	00:20:51:09.000
13.73	4.3	0.81	9.53	0.25	-0.04	00:20:52:09.000
13.73	4.29	0.81	9.56	0.25	-0.02	00:20:53:09.000
13.73	4.3	0.79	9.53	0.25	-0.01	00:20:54:09.000
13.73	4.3	0.8	9.56	0.25	-0.01	00:20:55:09.000
13.73	4.3	0.77	9.54	0.25	-0.03	00:20:56:09.000
13.73	4.31	0.81	9.56	0.24	-0.05	00:20:57:09.000
13.73	4.31	0.78	9.52	0.24	-0.06	00:20:58:09.000
13.74	4.31	0.79	9.51	0.24	-0.05	00:20:59:09.000
13.74	4.31	0.8	9.49	0.25	-0.06	00:21:00:09.000
13.74	4.31	0.8	9.49	0.24	-0.07	00:21:01:09.000
13.74	4.31	0.81	9.48	0.24	-0.08	00:21:02:09.000
13.74	4.3	0.8	9.49	0.25	-0.06	00:21:03:09.000
13.74	4.3	0.83	9.49	0.25	-0.07	00:21:04:09.000
13.74	4.3	0.81	9.49	0.24	-0.06	00:21:05:09.000
13.74	4.3	0.81	9.46	0.24	-0.05	00:21:06:09.000
13.74	4.3	0.81	9.48	0.24	-0.04	00:21:07:09.000
13.74	4.3	0.8	9.48	0.24	-0.02	00:21:08:09.000
13.74	4.3	0.83	9.48	0.24	-0.02	00:21:09:09.000
13.73	4.31	0.85	9.56	0.24	-0.04	00:21:10:09.000
13.74	4.31	0.84	9.48	0.25	-0.04	00:21:11:09.000
13.73	4.31	0.8	9.5	0.25	-0.04	00:21:12:09.000
13.74	4.31	0.83	9.52	0.25	-0.04	00:21:13:09.000
13.73	4.31	0.82	9.53	0.24	-0.04	00:21:14:09.000
13.73	4.31	0.81	9.53	0.25	-0.03	00:21:15:09.000
13.73	4.31	0.8	9.5	0.25	-0.02	00:21:16:09.000
13.73	4.31	0.82	9.52	0.25	-0.05	00:21:17:09.000
13.73	4.31	0.83	9.53	0.25	-0.05	00:21:18:09.000
13.73	4.31	0.83	9.55	0.25	-0.04	00:21:19:09.000
13.73	4.31	0.82	9.55	0.25	-0.02	00:21:20:09.000
13.73	4.32	0.81	9.54	0.25	-0.03	00:21:21:09.000
13.73	4.32	0.83	9.5	0.25	-0.03	00:21:22:09.000
13.74	4.32	0.79	9.44	0.25	-0.02	00:21:23:09.000
13.74	4.31	0.82	9.47	0.25	-0.03	00:21:24:09.000
13.74	4.31	0.82	9.45	0.25	-0.03	00:21:25:09.000
13.74	4.31	0.83	9.43	0.25	-0.03	00:21:26:09.000
13.74	4.31	0.82	9.44	0.25	-0.02	00:21:27:09.000
13.74	4.31	0.8	9.4	0.25	-0.02	00:21:28:09.000
13.74	4.31	0.82	9.43	0.25	-0.03	00:21:29:09.000
13.74	4.31	0.82	9.44	0.25	-0.03	00:21:30:09.000
13.74	4.31	0.82	9.42	0.25	-0.02	00:21:31:09.000
13.74	4.31	0.85	9.43	0.25	-0.03	00:21:32:09.000

13.74	4.31	0.85	9.45	0.25	-0.03 00:21:33:09.000
13.74	4.32	0.86	9.46	0.25	-0.03 00:21:34:09.000
13.73	4.32	0.79	9.45	0.25	-0.03 00:21:35:09.000
13.73	4.32	0.84	9.52	0.25	-0.04 00:21:36:09.000
13.74	4.32	0.83	9.5	0.25	-0.05 00:21:37:09.000
13.74	4.32	0.83	9.48	0.25	-0.05 00:21:38:09.000
13.74	4.31	0.83	9.47	0.25	-0.06 00:21:39:09.000
13.74	4.31	0.82	9.47	0.25	-0.06 00:21:40:09.000
13.74	4.31	0.82	9.45	0.25	-0.06 00:21:41:09.000
13.74	4.32	0.82	9.43	0.25	-0.07 00:21:42:09.000
13.74	4.31	0.85	9.47	0.25	-0.07 00:21:43:09.000
13.74	4.31	0.83	9.48	0.25	-0.07 00:21:44:09.000
13.74	4.32	0.84	9.51	0.25	-0.07 00:21:45:09.000
13.74	4.32	0.8	9.49	0.25	-0.06 00:21:46:09.000
13.74	4.31	0.81	9.44	0.25	-0.06 00:21:47:09.000
13.74	4.31	0.8	9.43	0.25	-0.06 00:21:48:09.000
13.75	4.31	0.83	9.44	0.25	-0.07 00:21:49:09.000
13.75	4.31	0.8	9.39	0.25	-0.07 00:21:50:09.000
13.75	4.31	0.83	9.39	0.25	-0.07 00:21:51:09.000
13.7	4.3	0.8	9.5	0.2	0.0 Average

GE-Energy & Environmental Research
 Post Bias Run 8A-100-3
 15 sec Averaged data
 For 5-07-2001 @ 21:53:22.97

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
5.16	0.76	9.42	0.38	-0.12	00:21:53:22.000
1.39	0.26	8.16	0.33	-0.09	00:21:53:37.000
0.42	0.08	3.42	0.19	-0.12	00:21:53:52.000
0.06	0.06	1.43	0.08	-0.12	00:21:54:07.000
0.05	0.06	0.27	0.04	-0.1	00:21:54:22.000
0.04	0.05	0.23	0.04	-0.1	00:21:54:37.000
0.05	0.05	0.22	0.04	-0.1	00:21:54:52.000
0.05	0.05	0.21	0.05	-0.09	00:21:55:07.000
0.04	0.05	0.2	0.06	-0.11	00:21:55:22.000
0.04	0.05	0.19	0.05	-0.11	00:21:55:37.000
0.04	0.05	0.18	0.05	-0.1	00:21:55:52.000
0.03	0.05	0.17	0.06	-0.1	00:21:56:07.000
0.04	0.05	0.15	0.06	-0.1	00:21:56:22.000
0.04	0.05	0.14	0.06	-0.1	00:21:56:37.000
0.03	0.05	0.13	0.06	-0.1	00:21:56:52.000
0.04	0.05	0.12	0.06	-0.13	00:21:57:07.000
5.02	0.11	0.12	0.06	-0.11	00:21:57:22.000
11.96	0.05	0.15	0.06	-0.15	00:21:57:37.000
12.13	0.04	0.33	0.06	-0.11	00:21:57:52.000
12.12	0.05	0.23	0.06	-0.1	00:21:58:07.000
12.06	0.04	0.08	0.06	-0.05	00:21:58:22.000
12.08	0.04	0.08	0.06	-0.04	00:21:58:37.000
12.08	0.04	0.06	0.06	-0.06	00:21:58:52.000
12.08	0.04	0.06	0.06	-0.07	O2
12.09	0.05	0.06	0.06	-0.08	00:21:59:22.000
12.09	0.04	0.06	0.07	-0.08	00:21:59:37.000
12.06	0.04	0.05	0.07	-0.09	00:21:59:52.000
12.09	0.04	0.04	0.07	-0.08	00:22:00:07.000
6.71	4.43	0.04	0.08	-0.08	00:22:00:22.000
0.1	8.04	0.04	0.07	-0.09	00:22:00:37.000
-0.03	8.09	0.04	0.06	-0.09	00:22:00:52.000
-0.05	8.09	0.04	0.08	-0.09	00:22:01:07.000
-0.05	8.09	0.04	0.07	-0.09	CO2
-0.05	8.09	0.04	0.06	-0.1	00:22:01:37.000
-0.05	8.09	0.03	0.06	0.69	00:22:01:52.000
-0.03	7.14	0.04	0.08	0.28	00:22:02:07.000
-0.01	0.68	0	0.06	0.19	00:22:02:22.000
-0.03	0.13	1.37	0.06	0.57	00:22:02:37.000
-0.03	0.1	7.97	0.06	1.18	00:22:02:52.000
-0.04	0.08	9.64	0.06	0.38	00:22:03:07.000
-0.05	0.07	9.95	0.06	0.27	00:22:03:22.000
-0.05	0.06	10.02	0.06	0.24	00:22:03:37.000
-0.04	0.05	10.04	0.06	0.17	00:22:03:52.000

-0.04	0.05	9.86	0.06	0.09	00:22:04:07.000
-0.04	0.05	9.99	0.06	0.07	NOx
-0.05	0.05	10.01	0.07	0.06	00:22:04:37.000
-0.05	0.05	9.99	0.06	0.04	00:22:04:52.000
-0.05	0.05	10.01	0.06	0	00:22:05:07.000
-0.06	0.05	9.26	0.08	-0.03	00:22:05:22.000
-0.08	0.05	7.63	0.13	-0.02	00:22:05:37.000
-0.08	0.05	1.65	0.21	-0.02	00:22:05:52.000
-0.08	0.06	-0.03	0.34	-0.04	00:22:06:07.000
-0.08	0.06	-0.03	0.46	-0.04	00:22:06:22.000
-0.07	0.07	-0.03	0.52	-0.04	00:22:06:37.000
-0.06	0.1	-0.03	0.52	-0.04	00:22:06:52.000
-0.05	0.22	-0.02	0.6	-0.04	00:22:07:07.000
0.08	1.7	-0.03	1.67	-0.07	00:22:07:22.000
2.38	3.13	-0.02	3.9	-0.07	00:22:07:37.000
6.35	3.59	-0.02	6.32	2.71	00:22:07:52.000
9.21	3.39	-0.03	8.11	0.63	00:22:08:07.000
10.67	1.74	-0.02	8.68	0.27	00:22:08:22.000
9.16	0.75	-0.03	7.23	0.13	00:22:08:37.000
5.91	0.44	-0.02	4.85	0.07	00:22:08:52.000
3.63	0.32	-0.03	3.66	0.04	00:22:09:07.000
2.24	0.25	-0.02	4.1	0.04	00:22:09:22.000
1.36	0.22	-0.03	4.92	0.02	00:22:09:37.000
0.81	0.19	-0.02	5.43	0.02	00:22:09:52.000
0.48	0.18	-0.03	5.78	0.02	00:22:10:07.000
0.31	0.16	-0.02	6.5	0	00:22:10:22.000
0.21	0.16	-0.02	7.56	0	00:22:10:37.000
0.14	0.15	-0.02	8.63	-0.01	00:22:10:52.000
0.1	0.14	-0.02	9.34	-0.01	00:22:11:07.000
0.07	0.13	-0.02	9.73	-0.02	00:22:11:22.000
0.05	0.13	-0.03	9.91	-0.02	00:22:11:37.000
0.04	0.12	-0.02	9.99	-0.03	00:22:11:52.000
0.02	0.12	-0.04	10.04	-0.04	00:22:12:07.000
0.02	0.11	-0.05	10.07	-0.03	00:22:12:22.000
0.01	0.11	-0.05	10.07	-0.04	00:22:12:37.000
0	0.11	-0.05	10.09	-0.03	00:22:12:52.000
0	0.1	-0.04	10.11	-0.04	00:22:13:07.000
-0.01	0.1	-0.04	10.09	-0.03	00:22:13:22.000
-0.01	0.1	-0.04	10.1	-0.04	00:22:13:37.000
-0.01	0.1	-0.05	10.13	-0.03	00:22:13:52.000
-0.02	0.1	-0.05	10.12	-0.04	00:22:14:07.000
-0.02	0.09	-0.04	10.08	-0.04	CO
-0.02	0.09	-0.05	9.76	-0.05	00:22:14:37.000
-0.02	0.09	-0.04	7.98	-0.05	00:22:14:52.000
-0.03	0.09	-0.05	5.74	-0.05	00:22:15:07.000
-0.03	0.08	-0.05	3.61	-0.04	00:22:15:22.000
-0.03	0.08	-0.05	2.01	-0.04	00:22:15:37.000
-0.03	0.09	-0.04	0.92	0.01	THC NOx Zero
-0.02	0.09	-0.04	0.35	5.45	00:22:16:07.000

0.01	0.02	9.87 00:16:04:19.004
0.01	0.01	9.89 00:16:04:34.004
0.01	0.01	9.89 00:16:04:49.004
0.02	0	9.89 Nox
0.02	0	9.89 00:16:05:19.004
0.01	0	9.89 00:16:05:34.004
0.02	0	9.89 00:16:05:49.004
0.01	0	9.91 00:16:06:04.004
0.01	0	9.91 00:16:06:19.004
0	0.01	9.9 00:16:06:34.004
0.01	0	9.9 00:16:06:49.004
0.03	0.01	9.22 00:16:07:04.004
0.02	0	9.63 00:16:07:19.004
0.02	0	7.11 00:16:07:34.004
0.01	0	1.43 00:16:07:49.004
0.01	0	0.36 00:16:08:04.004
0.01	0	0.25 00:16:08:19.004
0.01	-0.01	0.11 00:16:08:34.004
0	-0.01	0.08 00:16:08:49.004
-0.02	0	0.08 00:16:09:04.004
-0.01	0	0.11 00:16:09:19.004
5.12	0.79	0.14 00:16:09:34.004
9.25	1.82	0.15 00:16:09:49.004
11.03	1.82	0.15 00:16:10:04.004
12.49	1.74	0.15 00:16:10:19.004
13.71	1.65	0.15 00:16:10:34.004
13.71	1.56	0.18 00:16:10:49.004
11.75	1.61	0.14 00:16:11:04.004
9.16	1.65	0.18 00:16:11:19.004
7.38	1.62	0.18 00:16:11:34.004
6.53	1.74	0.09 00:16:11:49.004
5.84	1.74	0.07 00:16:12:04.004
5.25	1.82	0.07 00:16:12:19.004
4.74	1.83	0.07 00:16:12:34.004
4.33	1.84	0.07 Nox Zero
4.01	1.85	0.07 00:16:13:04.004
3.8	1.82	0.07 00:16:13:19.004
3.49	1.8	0.05 00:16:13:34.004
3.31	1.82	0.05 00:16:13:49.004
3.16	1.82	0.06 00:16:14:04.004
2.98	1.85	0.05 00:16:14:19.004
2.84	1.79	0.05 00:16:14:34.004
2.76	1.81	0.05 00:16:14:49.004
2.64	1.84	0.05 00:16:15:04.004
2.55	1.76	0.05 00:16:15:19.004
2.53	1.8	0.05 00:16:15:34.004
2.48	1.74	0.05 CO
2.53	1.78	0.05 00:16:16:04.004
2.52	1.79	0.05 00:16:16:19.004

GE-Energy & Environmental Research

Post 8A-85-2 Pre 8A-85-3

15 sec Averaged data

For 5-08-2001 @ 15:53:34.67

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.03	0		0.2 00:15:53:34.004
0.03	0		0.19 00:15:53:49.004
0.02	0		0.18 00:15:54:04.004
0.02	0		0.18 00:15:54:19.004
0.02	0		0.16 00:15:54:34.004
0.02	0		0.16 00:15:54:49.004
0.02	0		0.16 00:15:55:04.004
0.02	0		0.16 Zero
0.02	0		0.14 00:15:55:34.004
0.02	-0.01		0.14 00:15:55:49.004
0.02	-0.01		0.14 00:15:56:04.004
0	-0.01		0.14 00:15:56:19.004
0.02	0		0.11 00:15:56:34.004
0.87	0.04		0.11 00:15:56:49.004
10.56	0.02		0.12 00:15:57:04.004
11.83	0		0.27 00:15:57:19.004
11.91	-0.01		0.33 00:15:57:34.004
11.94	-0.01		0.14 00:15:57:49.004
11.94	-0.01		0.09 00:15:58:04.004
11.94	-0.01		0.08 00:15:58:19.004
11.95	-0.01		0.07 O2
11.95	-0.01		0.07 00:15:58:49.004
11.94	-0.01		0.07 00:15:59:04.004
11.93	-0.01		0.07 00:15:59:19.004
11.95	-0.01		0.07 00:15:59:34.004
6.13	4.56		0.07 00:15:59:49.004
0.18	7.79		0.08 00:16:00:04.004
0.04	7.86		0.08 00:16:00:19.004
0.02	7.88		0.07 00:16:00:34.004
0.01	7.9		0.06 00:16:00:49.004
0	7.9		0.05 00:16:01:04.004
0	7.91		0.05 00:16:01:19.004
0	7.91		0.05 CO2
0	7.91		0.05 00:16:01:49.004
-0.01	7.91		0.05 00:16:02:04.004
0	7.97		0.05 00:16:02:19.004
0	7.82		0.05 00:16:02:34.004
0.04	1.47		0.29 00:16:02:49.004
0.02	0.12		1.27 00:16:03:04.004
0.01	0.06		5.57 00:16:03:19.004
0.02	0.04		9.6 00:16:03:34.004
0.02	0.03		9.76 00:16:03:49.004
0.02	0.02		9.84 00:16:04:04.004

13.64	4.12	8.02 00:15:48:21.004
13.65	4.11	7.98 00:15:48:36.004
13.63	4.12	7.97 00:15:48:51.004
13.64	4.12	7.97 00:15:49:06.004
13.64	4.12	7.98 00:15:49:21.004
13.65	4.11	8 00:15:49:36.004
13.65	4.11	7.98 Average

13.65	4.12	7.97 00:15:36:06.004
13.66	4.11	7.99 00:15:36:21.004
13.65	4.12	7.98 00:15:36:36.004
13.65	4.12	7.94 00:15:36:51.004
13.65	4.13	7.93 00:15:37:06.004
13.65	4.12	7.95 00:15:37:21.004
13.66	4.11	7.92 00:15:37:36.004
13.65	4.12	7.91 00:15:37:51.004
13.65	4.12	7.95 00:15:38:06.004
13.66	4.12	7.94 00:15:38:21.004
13.65	4.11	7.95 00:15:38:36.004
13.65	4.11	7.96 00:15:38:51.004
13.65	4.11	7.99 00:15:39:06.004
13.65	4.11	7.99 00:15:39:21.004
13.65	4.12	7.97 00:15:39:36.004
13.64	4.12	7.95 00:15:39:51.004
13.65	4.12	7.96 00:15:40:06.004
13.65	4.12	7.97 00:15:40:21.004
13.65	4.11	7.99 00:15:40:36.004
13.65	4.12	7.99 00:15:40:51.004
13.65	4.12	7.99 00:15:41:06.004
13.65	4.12	7.99 00:15:41:21.004
13.65	4.11	7.99 00:15:41:36.004
13.65	4.11	8 00:15:41:51.004
13.64	4.11	8.03 00:15:42:06.004
13.65	4.12	8 00:15:42:21.004
13.65	4.12	8 00:15:42:36.004
13.65	4.12	8.01 00:15:42:51.004
13.65	4.12	8.05 00:15:43:06.004
13.65	4.12	8.04 00:15:43:21.004
13.65	4.12	8.02 00:15:43:36.004
13.64	4.12	8.01 00:15:43:51.004
13.64	4.12	8.03 00:15:44:06.004
13.65	4.12	7.98 00:15:44:21.004
13.64	4.12	8 00:15:44:36.004
13.64	4.12	8.03 00:15:44:51.004
13.64	4.12	8.06 00:15:45:06.004
13.65	4.12	8.06 00:15:45:21.004
13.64	4.12	8.04 00:15:45:36.004
13.64	4.12	8.06 00:15:45:51.004
13.64	4.11	8.08 00:15:46:06.004
13.65	4.11	8.03 00:15:46:21.004
13.65	4.11	8.02 00:15:46:36.004
13.64	4.12	8.06 00:15:46:51.004
13.64	4.12	8.12 00:15:47:06.004
13.64	4.11	8.12 00:15:47:21.004
13.65	4.12	8.06 00:15:47:36.004
13.63	4.12	8 00:15:47:51.004
13.64	4.12	8.05 00:15:48:06.004

GE-Energy & Environmental Research
Run 8A-85-2
15 sec Averaged data
For 5-08-2001 @ 15:25:21.43

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.67	4.1	7.87	00:15:25:21.004
13.66	4.11	7.89	00:15:25:36.004
13.67	4.11	7.9	00:15:25:51.004
13.66	4.1	7.89	00:15:26:06.004
13.66	4.1	7.89	00:15:26:21.004
13.66	4.1	7.91	00:15:26:36.004
13.66	4.1	7.93	00:15:26:51.004
13.66	4.11	7.92	00:15:27:06.004
13.66	4.11	7.91	00:15:27:21.004
13.66	4.11	7.91	00:15:27:36.004
13.65	4.11	7.92	00:15:27:51.004
13.66	4.1	7.97	00:15:28:06.004
13.67	4.11	7.94	00:15:28:21.004
13.66	4.11	7.91	00:15:28:36.004
13.66	4.11	7.94	00:15:28:51.004
13.66	4.11	7.99	00:15:29:06.004
13.66	4.11	7.99	00:15:29:21.004
13.65	4.11	7.99	00:15:29:36.004
13.65	4.11	8.01	00:15:29:51.004
13.66	4.11	7.99	00:15:30:06.004
13.67	4.1	7.97	00:15:30:21.004
13.65	4.11	7.97	00:15:30:36.004
13.66	4.1	7.97	00:15:30:51.004
13.66	4.1	8.01	00:15:31:06.004
13.65	4.11	8	00:15:31:21.004
13.65	4.11	7.96	00:15:31:36.004
13.65	4.11	7.96	00:15:31:51.004
13.65	4.11	8.02	00:15:32:06.004
13.65	4.11	7.99	00:15:32:21.004
13.65	4.12	7.97	00:15:32:36.004
13.65	4.12	7.99	00:15:32:51.004
13.65	4.12	8.01	00:15:33:06.004
13.66	4.11	8.03	00:15:33:21.004
13.65	4.12	8.02	00:15:33:36.004
13.65	4.12	8	00:15:33:51.004
13.65	4.11	8.01	00:15:34:06.004
13.66	4.11	8	00:15:34:21.004
13.66	4.11	7.97	00:15:34:36.004
13.65	4.11	7.95	00:15:34:51.004
13.65	4.11	7.99	00:15:35:06.004
13.66	4.11	7.99	00:15:35:21.004
13.66	4.11	7.98	00:15:35:36.004
13.65	4.12	7.94	00:15:35:51.004

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0.01	0.03	0.03 00:15:10:33.004
0.01	0.03	0.03 00:15:10:48.004
0.02	0.03	0.01 00:15:11:03.004
0.02	0.02	0.01 00:15:11:18.004
0.03	0.02	0.01 00:15:11:33.004
0.02	0.02	0.01 00:15:11:48.004
0.02	0.02	0.01 00:15:12:03.004
0.01	0.02	0.01 00:15:12:18.004
0.01	0.02	0.01 00:15:12:33.004
0.01	0.02	0.01 00:15:12:48.004
0.01	0.02	0.01 00:15:13:03.004
0.01	0.02	0.02 00:15:13:18.004
0.01	0.01	0.01 00:15:13:33.004
0	0.01	0.01 00:15:13:48.004
0.01	0.02	0.01 00:15:14:03.004
0.01	0.01	0.01 00:15:14:18.004
0.01	0.01	0.01 00:15:14:33.004
0	0.02	0.01 00:15:14:48.004
0.01	0.02	0.01 CO
0.01	0.02	0.01 00:15:15:18.004
0.01	0.01	0.01 00:15:15:33.004
0.01	0.01	0.02 00:15:15:48.004
0	0.01	0.01 00:15:16:03.004
0.02	0.02	0.01 00:15:16:18.004
0.01	0.02	0.02 00:15:16:33.004
0.02	0.02	0.01 00:15:16:48.004
0.02	0.03	0.02 00:15:17:03.004
0.03	0.03	0.01 00:15:17:18.004
0.03	0.03	0.01 00:15:17:33.004
0.03	0.03	0.01 00:15:17:48.004
0.04	0.03	0.01 00:15:18:03.004
0.03	0.03	0.01 00:15:18:18.004
0.05	0.04	0.01 00:15:18:33.004
0.04	0.04	0.01 00:15:18:48.004
0.04	0.04	0.01 THC
0.04	0.04	0.01 00:15:19:18.004
0.05	0.04	0.01 00:15:19:33.004

0.02	0.07	4.64 00:14:58:18.004
0.01	0.05	9.07 00:14:58:33.004
0.01	0.03	9.76 00:14:58:48.004
0.02	0.02	9.85 00:14:59:03.004
0.02	0.02	9.91 00:14:59:18.004
0.02	0.01	9.93 00:14:59:33.004
0.01	0.01	9.93 00:14:59:48.004
0.01	0.01	9.93 00:15:00:03.004
0.02	0	9.94 00:15:00:18.004
0.01	0	9.95 Nox
0	0	9.93 00:15:00:48.004
0	0	9.93 00:15:01:03.004
-0.02	0.02	9.95 00:15:01:18.004
-0.02	0.02	9.01 00:15:01:33.004
1.45	0.06	5.32 00:15:01:48.004
6.5	1.65	3.52 00:15:02:03.004
8.86	1.97	2.19 00:15:02:18.004
9.24	1.86	3.01 00:15:02:33.004
8.19	1.77	7.9 00:15:02:48.004
7.04	1.71	9.08 00:15:03:03.004
6.66	1.86	6.19 00:15:03:18.004
4.86	0.47	2.85 00:15:03:33.004
2.18	0.06	0.67 00:15:03:48.004
0.7	0.03	0.03 00:15:04:03.004
0.2	0.02	0.04 00:15:04:18.004
0.06	0.02	0.03 00:15:04:33.004
0.02	0.02	0.03 Nox Zero
0	0.02	0.03 00:15:05:03.004
0	0.01	0.03 00:15:05:18.004
0	0.02	0.03 00:15:05:33.004
0	0.02	0.03 00:15:05:48.004
-0.01	0.02	0.03 00:15:06:03.004
-0.01	0.02	0.03 00:15:06:18.004
0	0.03	0.03 00:15:06:33.004
0	0.03	0.04 00:15:06:48.004
0	0.03	0.03 00:15:07:03.004
0	0.03	0.04 00:15:07:18.004
0	0.03	0.03 00:15:07:33.004
0	0.02	0.03 00:15:07:48.004
0.01	0.02	0.03 00:15:08:03.004
0	0.02	0.03 00:15:08:18.004
0	0.03	0.04 00:15:08:33.004
0.01	0.02	0.04 00:15:08:48.004
0.01	0.03	0.03 00:15:09:03.004
0.01	0.02	0.03 00:15:09:18.004
0.01	0.02	0.03 00:15:09:33.004
0.01	0.03	0.03 00:15:09:48.004
0.01	0.02	0.03 00:15:10:03.004
0.01	0.02	0.03 00:15:10:18.004

GE-Energy & Environmental Research
 Post8A-85-1 Pre 8A-85- 2
 15 sec Averaged data
 For 5-08-2001 @ 14:47:33.67

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0	0	0	0.28 00:14:47:33.004
0.02	0	0	0.27 00:14:47:48.004
0.03	0	0	0.26 00:14:48:03.004
0.02	0	0	0.25 00:14:48:18.004
0.02	0	0	0.24 00:14:48:33.004
0.02	0	0	0.23 00:14:48:48.004
0.02	-0.01	0	0.22 00:14:49:03.004
0.01	0	0	0.21 00:14:49:18.004
0.01	0	0	0.2 Zero
0	0	0	0.2 00:14:49:48.004
0.01	0	0	0.2 00:14:50:03.004
0	0.01	0	0.21 00:14:50:18.004
0.01	0.01	0	0.33 00:14:50:33.004
0.06	0.01	0	0.68 THC Zero
2.17	0.05	0	0.81 00:14:51:03.004
2.2	0.01	0	0.89 00:14:51:18.004
11.07	-0.01	0	0.77 00:14:51:33.004
11.89	-0.01	0	0.38 00:14:51:48.004
11.92	-0.01	0	0.2 00:14:52:03.004
11.92	-0.01	0	0.13 00:14:52:18.004
11.93	-0.01	0	0.12 00:14:52:33.004
11.93	-0.01	0	0.11 00:14:52:48.004
11.93	-0.01	0	0.11 O2
11.93	-0.01	0	0.11 00:14:53:18.004
11.92	-0.01	0	0.09 00:14:53:33.004
11.94	-0.01	0	0.09 00:14:53:48.004
7.8	3.43	0	0.09 00:14:54:03.004
0.28	7.81	0	0.09 00:14:54:18.004
0.03	7.9	0	0.09 00:14:54:33.004
0.02	7.93	0	0.1 00:14:54:48.004
0.01	7.94	0	0.08 00:14:55:03.004
0	7.94	0	0.08 00:14:55:18.004
0	7.95	0	0.07 00:14:55:33.004
0	7.95	0	0.07 CO2
0	7.95	0	0.08 00:14:56:03.004
0	7.95	0	0.07 00:14:56:18.004
-0.01	7.96	0	0.07 00:14:56:33.004
-0.01	7.96	0	0.07 00:14:56:48.004
-0.02	7.94	0	0.08 00:14:57:03.004
-0.01	7.93	0	0.07 00:14:57:18.004
0	7.96	0	0.07 00:14:57:33.004
0.08	2.47	0	0.23 00:14:57:48.004
0.03	0.14	0	0.86 00:14:58:03.004

	13.68	4.14	7.89	00:14:43:48.004
	13.68	4.13	7.92	00:14:44:03.004
□	13.69	4.14	8.00	Average

13.7	4.14	8.1	00:14:31:03.004
13.69	4.14	8.12	00:14:31:18.004
13.7	4.13	8.15	00:14:31:33.004
13.69	4.14	8.13	00:14:31:48.004
13.69	4.14	8.13	00:14:32:03.004
13.69	4.13	8.16	00:14:32:18.004
13.7	4.13	8.16	00:14:32:33.004
13.69	4.13	8.14	00:14:32:48.004
13.69	4.14	8.16	00:14:33:03.004
13.69	4.13	8.19	00:14:33:18.004
13.69	4.13	8.17	00:14:33:33.004
13.69	4.13	8.14	00:14:33:48.004
13.69	4.13	8.11	00:14:34:03.004
13.7	4.13	8.09	00:14:34:18.004
13.7	4.13	8.08	00:14:34:33.004
13.69	4.13	8.07	00:14:34:48.004
13.69	4.14	8.09	00:14:35:03.004
13.69	4.14	8.1	00:14:35:18.004
13.69	4.14	8.11	00:14:35:33.004
13.7	4.14	8.11	00:14:35:48.004
13.69	4.14	8.1	00:14:36:03.004
13.69	4.14	8.09	00:14:36:18.004
13.69	4.14	8.09	00:14:36:33.004
13.69	4.14	8.03	00:14:36:48.004
13.68	4.14	8	00:14:37:03.004
13.68	4.14	8.01	00:14:37:18.004
13.69	4.13	8.04	00:14:37:33.004
13.69	4.13	8.03	00:14:37:48.004
13.68	4.14	8	00:14:38:03.004
13.68	4.14	8.01	00:14:38:18.004
13.68	4.14	8.04	00:14:38:33.004
13.69	4.13	8.03	00:14:38:48.004
13.69	4.14	7.98	00:14:39:03.004
13.69	4.13	7.99	00:14:39:18.004
13.68	4.13	8	00:14:39:33.004
13.68	4.14	8.02	00:14:39:48.004
13.69	4.13	8.01	00:14:40:03.004
13.69	4.14	7.99	00:14:40:18.004
13.68	4.14	7.97	00:14:40:33.004
13.69	4.14	7.97	00:14:40:48.004
13.69	4.14	7.96	00:14:41:03.004
13.68	4.14	7.95	00:14:41:18.004
13.68	4.14	7.94	00:14:41:33.004
13.68	4.14	8	00:14:41:48.004
13.68	4.15	7.99	00:14:42:03.004
13.68	4.14	7.97	00:14:42:18.004
13.68	4.14	7.99	00:14:42:33.004
13.68	4.14	7.96	00:14:42:48.004
13.68	4.14	7.95	00:14:43:03.004
13.68	4.14	7.92	00:14:43:18.004
13.69	4.14	7.87	00:14:43:33.004

GE-Energy & Environmental Research
 Run 8A-85-1
 15 sec Averaged data
 For 5-08-2001 @ 14:20:03.05

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.7	4.11	7.85	00:14:20:03.004
13.7	4.13	7.87	00:14:20:18.004
13.68	4.13	7.89	00:14:20:33.004
13.69	4.13	7.87	00:14:20:48.004
13.7	4.13	7.9	00:14:21:03.004
13.69	4.13	7.9	00:14:21:18.004
13.69	4.13	7.89	00:14:21:33.004
13.69	4.13	7.89	00:14:21:48.004
13.69	4.13	7.9	00:14:22:03.004
13.69	4.13	7.91	00:14:22:18.004
13.7	4.14	7.9	00:14:22:33.004
13.69	4.13	7.91	00:14:22:48.004
13.7	4.14	7.92	00:14:23:03.004
13.69	4.13	7.94	00:14:23:18.004
13.69	4.14	7.9	00:14:23:33.004
13.69	4.13	7.89	00:14:23:48.004
13.69	4.13	7.93	00:14:24:03.004
13.69	4.13	7.93	00:14:24:18.004
13.7	4.13	7.9	00:14:24:33.004
13.69	4.13	7.89	00:14:24:48.004
13.69	4.13	7.89	00:14:25:03.004
13.7	4.13	7.9	00:14:25:18.004
13.69	4.13	7.91	00:14:25:33.004
13.7	4.13	7.94	00:14:25:48.004
13.7	4.14	7.94	00:14:26:03.004
13.69	4.14	7.93	00:14:26:18.004
13.7	4.14	7.96	00:14:26:33.004
13.69	4.14	7.98	00:14:26:48.004
13.7	4.14	7.99	00:14:27:03.004
13.69	4.14	7.97	00:14:27:18.004
13.69	4.14	7.98	00:14:27:33.004
13.69	4.14	8.01	00:14:27:48.004
13.7	4.13	8.02	00:14:28:03.004
13.69	4.14	8.03	00:14:28:18.004
13.69	4.13	8.05	00:14:28:33.004
13.69	4.13	8.07	00:14:28:48.004
13.69	4.13	8.07	00:14:29:03.004
13.69	4.13	8.09	00:14:29:18.004
13.69	4.13	8.09	00:14:29:33.004
13.7	4.14	8.09	00:14:29:48.004
13.69	4.13	8.08	00:14:30:03.004
13.7	4.14	8.09	00:14:30:18.004
13.69	4.14	8.09	00:14:30:33.004
13.7	4.14	8.11	00:14:30:48.004

8.17	0.07	0.01 00:13:09:21.004
8.38	0.07	0.01 00:13:09:36.004
8.55	0.07	0.02 00:13:09:51.004
8.7	0.07	0.01 00:13:10:06.004
8.81	0.07	0.01 00:13:10:21.004
8.86	0.07	0.02 00:13:10:36.004
8.88	0.07	0.01 00:13:10:51.004
8.91	0.06	0.01 00:13:11:06.004
8.98	0.05	0.01 00:13:11:21.004
9.02	0.05	0.01 00:13:11:36.004
9.01	0.05	0.02 00:13:11:51.004
9.03	0.05	0.01 THC Mid
9.08	0.04	0.01 00:13:12:21.004
9.15	0.04	0.01 00:13:12:36.004
9.23	0.04	0.01 00:13:12:51.004
9.29	0.05	0.01 00:13:13:06.004
9.35	0.04	0.01 00:13:13:21.004
9.4	0.04	0.01 00:13:13:36.004
9.52	0.04	0.01 00:13:13:51.004
9.79	0.04	0.02 00:13:14:06.004
10.15	0.04	0.01 00:13:14:21.004
10.55	0.04	0.01 00:13:14:36.004
10.96	0.04	0.01 00:13:14:51.004
11.34	0.04	0.02 00:13:15:06.004
11.66	0.03	0.03 00:13:15:21.004
11.93	0.03	0.04 00:13:15:36.004
12.16	0.03	0.01 00:13:15:51.004
12.37	0.04	0.01 00:13:16:06.004
12.56	0.04	0.01 00:13:16:21.004
12.72	0.04	0.01 00:13:16:36.004
12.87	0.04	0.01 00:13:16:51.004
13	0.04	0.01 THC Low
13.11	0.04	0.01 00:13:17:21.004

0.25	0.07	0.01 00:12:57:06.004
0.19	0.06	0.02 00:12:57:21.004
0.16	0.05	0.01 00:12:57:36.004
0.14	0.04	0.01 00:12:57:51.004
0.12	0.04	0.01 00:12:58:06.004
0.11	0.05	0.01 00:12:58:21.004
0.1	0.05	0.01 CO
0.1	0.05	0.01 00:12:58:51.004
0.09	0.05	0.01 00:12:59:06.004
0.09	0.04	0.01 00:12:59:21.004
0.08	0.05	0.01 00:12:59:36.004
0.08	0.04	0.01 00:12:59:51.004
0.07	0.04	0.01 00:13:00:06.004
0.07	0.04	0.01 00:13:00:21.004
0.07	0.05	0.01 00:13:00:36.004
0.07	0.04	0.01 00:13:00:51.004
0.07	0.04	0.01 00:13:01:06.004
0.07	0.04	0.01 00:13:01:21.004
0.07	0.05	0.01 00:13:01:36.004
0.06	0.05	0.01 00:13:01:51.004
0.07	0.05	0.02 00:13:02:06.004
0.07	0.05	0.03 00:13:02:21.004
0.08	0.05	0.03 00:13:02:36.004
0.07	0.05	0.04 00:13:02:51.004
0.07	0.05	0.03 00:13:03:06.004
0.07	0.05	0.03 00:13:03:21.004
0.07	0.05	0.03 00:13:03:36.004
0.07	0.05	0.03 00:13:03:51.004
0.07	0.05	0.04 THC Zero
0.07	0.05	0.03 00:13:04:21.004
0.08	0.05	0.03 00:13:04:36.004
0.08	0.05	0.03 00:13:04:51.004
0.09	0.05	0.02 00:13:05:06.004
0.09	0.05	0.01 00:13:05:21.004
0.09	0.05	0.01 00:13:05:36.004
0.1	0.06	0.02 00:13:05:51.004
0.11	0.06	0.01 00:13:06:06.004
0.11	0.06	0.02 00:13:06:21.004
0.11	0.06	0.01 00:13:06:36.004
0.13	0.06	0.01 00:13:06:51.004
0.23	0.06	0.01 00:13:07:06.004
0.71	0.06	0.01 00:13:07:21.004
1.88	0.06	0.01 00:13:07:36.004
3.47	0.06	0.01 THC High
4.93	0.06	0.01 00:13:08:06.004
6.08	0.06	0.01 00:13:08:21.004
6.92	0.07	0.02 00:13:08:36.004
7.51	0.07	0.01 00:13:08:51.004
7.9	0.07	0.02 00:13:09:06.004

0.04	7.04	0.03 00:12:44:51.004
0.07	0.69	0 00:12:45:06.004
0.04	0.11	1.71 00:12:45:21.004
0.02	0.1	7.02 00:12:45:36.004
0.03	0.11	8.88 00:12:45:51.004
0.06	0.11	7.64 00:12:46:06.004
0.07	0.15	6.13 00:12:46:21.004
0.04	0.02	8.75 00:12:46:36.004
0.04	0.01	9.79 00:12:46:51.004
0.05	0.01	9.76 00:12:47:06.004
0.04	0.01	9.62 00:12:47:21.004
0.04	0.01	9.63 00:12:47:36.004
0.04	0.01	9.93 00:12:47:51.004
0.04	0	9.96 00:12:48:06.004
0.05	0	9.99 00:12:48:21.004
0.04	0	9.99 00:12:48:36.004
0.05	0	9.99 00:12:48:51.004
0.04	0	10 00:12:49:06.004
0.04	0	10.01 00:12:49:21.004
0.04	0	10.01 00:12:49:36.004
0.04	0	10 NOx
0.04	0	10 00:12:50:06.004
0.03	0	10.01 00:12:50:21.004
0.03	0	9.99 00:12:50:36.004
0.04	0	9.98 00:12:50:51.004
0.02	0	10 00:12:51:06.004
0.02	0.01	8.31 00:12:51:21.004
2.19	0.01	4.52 00:12:51:36.004
8.66	0.04	2.79 00:12:51:51.004
12.9	0.06	1.81 00:12:52:06.004
14.47	0.06	1.81 00:12:52:21.004
11.89	0.06	2.31 00:12:52:36.004
10.11	0.07	0.86 00:12:52:51.004
9.14	0.07	0.01 00:12:53:06.004
8.08	0.07	0.02 00:12:53:21.004
6.73	0.07	0.01 00:12:53:36.004
5.13	0.09	0.01 00:12:53:51.004
3.68	0.12	0.01 00:12:54:06.004
3.06	0.21	0.01 00:12:54:21.004
3.42	0.22	0.01 00:12:54:36.004
3.89	0.15	0.01 00:12:54:51.004
3.75	0.11	0.01 00:12:55:06.004
3.37	0.12	0.01 00:12:55:21.004
2.76	0.12	0.01 00:12:55:36.004
1.99	0.1	0.01 00:12:55:51.004
1.35	0.09	0.01 00:12:56:06.004
0.91	0.08	0.01 00:12:56:21.004
0.62	0.07	0.01 00:12:56:36.004
0.4	0.07	0.01 00:12:56:51.004

GE-Energy & Environmental Research
 Post 8A-100-3 Pre 8A-85-1
 15 sec Averaged data
 For 5-08-2001 @ 12:34:06.24

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
11.99	0	0.05	00:12:34:06.004
10.72	0	0.06	00:12:34:21.004
1.02	0	0.06	00:12:34:36.004
0.1	0	0.05	00:12:34:51.004
0.08	0	0.05	00:12:35:06.004
0.07	0	0.05	00:12:35:21.004
0.06	-0.01	0.05	00:12:35:36.004
0.06	-0.01	0.05	Zero
0.06	-0.01	0.05	00:12:36:06.004
0.05	-0.01	0.05	00:12:36:21.004
0.06	0	0.05	00:12:36:36.004
0.11	0	0.05	00:12:36:51.004
9	0	0.05	00:12:37:06.004
11.9	0	0.05	00:12:37:21.004
11.96	0	0.05	00:12:37:36.004
11.97	0	0.04	00:12:37:51.004
11.98	-0.01	0.03	00:12:38:06.004
11.98	-0.01	0.03	00:12:38:21.004
11.98	-0.01	0.03	O2
11.98	0	0.04	00:12:38:51.004
11.96	0	0.03	00:12:39:06.004
11.95	0	0.03	00:12:39:21.004
11.97	0	0.03	00:12:39:36.004
11.94	0	0.04	00:12:39:51.004
11.94	0	0.19	00:12:40:06.004
13.11	0.02	0.36	00:12:40:21.004
15.31	0.07	0.52	00:12:40:36.004
15.94	0.08	0.52	00:12:40:51.004
13.99	0.1	0.44	00:12:41:06.004
1.23	0.04	0.37	00:12:41:21.004
0.24	6.02	0.3	00:12:41:36.004
0.04	7.88	0.16	00:12:41:51.004
0.03	7.92	0.05	00:12:42:06.004
0.03	7.94	0.04	00:12:42:21.004
0.03	7.94	0.03	00:12:42:36.004
0.03	7.95	0.04	00:12:42:51.004
0.03	7.96	0.03	00:12:43:06.004
0.03	7.96	0.03	00:12:43:21.004
0.02	7.97	0.03	CO2
0.02	7.97	0.03	00:12:43:51.004
0.02	7.97	0.03	00:12:44:06.004
0.02	7.96	0.03	00:12:44:21.004
0.03	7.97	0.03	00:12:44:36.004

PLANT: Florida Power and Light	RUN NUMBER: Run 8A-85-3	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 16:25	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 16:49	CHECKED BY:
START DATE: 5/8/01		
END DATE: 5/8/01	MAXIMUM RESPONSE TIME SEC. 60	

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.0%	0.0%	-0.1%		
	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, C _{bi}	UPSCALE HIGH (H), MID (M), or LD (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.95	7.91	9.89		
	ZERO	0.02	0.00	0.07		
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	-0.2%	-0.9%	-0.5%		
	ZERO	0.1%	0.0%	0.6%		
FINAL BIAS CHECK, C _{bf}	UPSCALE	11.93	7.98	10.03		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.00	-0.02	0.01		
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/Span)x100%	UPSCALE	-0.3%	-0.2%	0.1%		
	ZERO	0.0%	-0.2%	0.3%		
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/Span)x100%	UPSCALE	-0.1%	0.7%	0.7%		
	ZERO	-0.1%	-0.2%	-0.3%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.01	-0.01	0.04		
AVERAGE % BIAS	UPSCALE	-0.2%	-0.5%	-0.2%		
	ZERO	0.0%	-0.1%	0.4%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		11.94	7.95	9.96		
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		13.69	4.14	7.91		

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.76	4.17	7.93		
15% O2 CORRECTION, C _{15%} = C _{gas} * 5.9 / (20.9 - % O2)		3.45	6.56		

PLANT: Florida Power and Light RUN NUMBER: Run 8A-85-2 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 15:25 ENTERED BY: John Maxwell
 LOCATION: 8A Gas Turbine RUN END TIME: 15:49 CHECKED BY:
 START DATE: 5/8/01
 END DATE: 5/8/01 MAXIMUM RESPONSE TIME SEC. 60

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	-0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.93	7.95	9.95		
	ZERO	0.01	0.00	0.03		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	-0.3%	-0.5%	-0.3%		
Bi = ((Cbi-Cai)/Span)x100%	ZERO	0.0%	0.0%	0.4%		
FINAL BIAS CHECK, Cbf	UPSCALE	11.95	7.91	9.89		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.00	0.07		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	-0.2%	-0.9%	-0.5%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.0%	0.6%		
DRIFT CHECK, D	UPSCALE	0.1%	-0.4%	-0.3%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.0%	0.2%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.02	0.00	0.05		
Co=(Cbi.zero+Cbf.zero)/2						
AVERAGE % BIAS	UPSCALE	-0.2%	-0.7%	-0.4%		
	ZERO	0.1%	0.0%	0.5%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		11.94	7.93	9.92		
Cm=(Cbi,upscale+Cbf,upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.65	4.11	7.98		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.72	4.15	8.03		
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9- % O2)		3.41	6.60		

PLANT: Florida Power and Light	RUN NUMBER: Run 8A-85-1	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 14:20	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 14:44	CHECKED BY:
START DATE: 5/8/01		
END DATE: 5/8/01	MAXIMUM RESPONSE TIME SEC. 60	

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	-0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	H	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.98	7.97	10.00		
	ZERO	0.06	-0.01	0.05		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	-0.1%	-0.3%	0.0%		
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.2%	-0.1%	0.5%		
FINAL BIAS CHECK, Cbf	UPSCALE	11.93	7.95	9.95		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.01	0.00	0.03		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	-0.3%	-0.5%	-0.3%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.0%	0.0%	0.4%		
DRIFT CHECK, D	UPSCALE	-0.2%	-0.2%	-0.3%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	-0.2%	0.1%	-0.1%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.04	-0.01	0.04		
Co = (Cbi.zero + Cbf.zero)/2						
AVERAGE % BIAS	UPSCALE	-0.2%	-0.4%	-0.1%		
	ZERO	0.1%	-0.1%	0.4%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		11.96	7.96	9.98		
Cm = (Cbi.upscale + Cbf.upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.69	4.14	8.00		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.75	4.16	8.01		
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.43	6.61		

85% Load

-0.03	0.09	-0.05	0.14	3.84	00:22:16:22.000
-0.03	0.08	-0.05	0.07	2.43	00:22:16:37.000
-0.03	0.09	-0.04	0.06	2.22	00:22:16:52.000
-0.03	0.09	-0.04	0.06	0.31	00:22:17:07.000
-0.03	0.09	-0.05	0.06	-0.08	00:22:17:22.000
-0.03	0.09	-0.04	0.06	-0.15	00:22:17:37.000
-0.03	0.09	-0.05	0.06	-0.18	00:22:17:52.000
-0.03	0.09	-0.05	0.06	-0.2	00:22:18:07.000
-0.03	0.09	-0.05	0.06	-0.15	00:22:18:22.000
-0.03	0.09	-0.04	0.06	-0.09	00:22:18:37.000
-0.03	0.09	-0.04	0.06	-0.1	00:22:18:52.000
-0.02	0.09	-0.04	0.05	-0.1	00:22:19:07.000
-0.02	0.09	-0.04	0.06	-0.1	00:22:19:22.000
-0.02	0.1	-0.05	0.06	-0.02	00:22:19:37.000
-0.02	0.1	-0.05	0.06	0.02	00:22:19:52.000
-0.02	0.1	-0.05	0.06	0.01	00:22:20:07.000
-0.02	0.1	-0.04	0.06	0.01	00:22:20:22.000
-0.02	0.1	-0.04	0.05	0	00:22:20:37.000
-0.02	0.1	-0.05	0.04	1.14	00:22:20:52.000
-0.02	0.1	-0.05	0.06	0.23	00:22:21:07.000
-0.02	0.1	-0.05	0.06	0.11	00:22:21:22.000
-0.02	0.1	-0.05	0.06	0.08	00:22:21:37.000
-0.02	0.1	-0.04	0.04	0.06	00:22:21:52.000
0	0.1	-0.05	0.06	0.07	00:22:22:07.000
-0.01	0.1	-0.05	0.06	0.06	00:22:22:22.000
-0.01	0.1	-0.05	0.06	0.06	00:22:22:37.000
-0.01	0.1	-0.04	0.06	0.05	00:22:22:52.000
-0.01	0.1	-0.05	0.05	0.14	00:22:23:07.000
-0.01	0.1	-0.04	0.04	0.21	00:22:23:22.000
0	0.1	-0.04	0.06	0.11	00:22:23:37.000
0	0.1	-0.05	0.06	0.11	00:22:23:52.000
0	0.1	-0.04	0.06	0.14	00:22:24:07.000
-0.01	0.11	-0.05	0.06	0.08	00:22:24:22.000
0.03	0.12	-0.04	0.06	-0.21	00:22:24:37.000
0.01	0.11	-0.04	0.06	0.08	00:22:24:52.000
0.01	0.11	-0.04	0.06	0.09	00:22:25:07.000
0.01	0.11	-0.05	0.07	0.08	00:22:25:22.000
0.01	0.11	-0.05	0.08	0.06	00:22:25:37.000
0.01	0.11	-0.05	0.08	0.21	00:22:25:52.000
0.03	0.11	-0.05	0.08	4.86	00:22:26:07.000
0.04	0.11	-0.04	0.08	9.88	00:22:26:22.000
0.03	0.12	-0.04	0.08	10.01	00:22:26:37.000
0.04	0.12	-0.05	0.08	10.04	THC
0.05	0.12	-0.04	0.08	10.07	00:22:27:07.000
0.04	0.12	-0.04	0.08	10.04	00:22:27:22.000
0.05	0.12	-0.05	0.08	10.04	00:22:27:37.000

2.45	1.76	0.05 00:16:16:34.004
2.5	1.73	0.05 00:16:16:49.004
1.91	0.3	0.06 00:16:17:04.004
11.61	3.71	0.01 00:16:17:19.004
13.67	4.11	2.99 00:16:17:34.004
13.69	4.12	7.24 00:16:17:49.004
13.71	4.13	8.09 00:16:18:04.004
13.71	4.13	8.22 00:16:18:19.004
13.71	4.13	8.19 00:16:18:34.004
13.72	4.14	8.17 00:16:18:49.004
13.71	4.14	8.2 00:16:19:04.004
13.71	4.14	8.24 00:16:19:19.004
13.72	4.14	8.25 00:16:19:34.004
13.72	4.14	8.22 00:16:19:49.004
13.71	4.14	8.18 00:16:20:04.004
13.71	4.14	8.2 THC
13.7	4.13	8.23 00:16:20:34.004
13.04	3.83	8.11 00:16:20:49.004
9.93	1.58	7.88 00:16:21:04.004

GE-Energy & Environmental Research
Run 8A-85-3
15 sec Averaged data
For 5-08-2001 @ 16:25:37.45

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.7	4.13	7.9	00:16:25:37.004
13.7	4.13	7.88	00:16:25:52.004
13.69	4.13	7.84	00:16:26:07.004
13.7	4.13	7.9	00:16:26:22.004
13.7	4.13	7.93	00:16:26:37.004
13.7	4.13	7.92	00:16:26:52.004
13.71	4.13	7.91	00:16:27:07.004
13.7	4.14	7.91	00:16:27:22.004
13.69	4.14	7.91	00:16:27:37.004
13.7	4.14	7.93	00:16:27:52.004
13.7	4.14	7.97	00:16:28:07.004
13.7	4.14	7.95	00:16:28:22.004
13.7	4.14	7.94	00:16:28:37.004
13.7	4.14	7.95	00:16:28:52.004
13.7	4.13	7.95	00:16:29:07.004
13.7	4.14	7.95	00:16:29:22.004
13.69	4.14	7.95	00:16:29:37.004
13.7	4.14	7.95	00:16:29:52.004
13.7	4.13	7.95	00:16:30:07.004
13.7	4.14	7.95	00:16:30:22.004
13.69	4.14	7.95	00:16:30:37.004
13.7	4.14	7.95	00:16:30:52.004
13.7	4.13	7.95	00:16:31:07.004
13.7	4.14	7.97	00:16:31:22.004
13.69	4.14	7.96	00:16:31:37.004
13.69	4.14	7.93	00:16:31:52.004
13.69	4.15	7.94	00:16:32:07.004
13.69	4.14	7.97	00:16:32:22.004
13.71	4.14	7.96	00:16:32:37.004
13.7	4.14	7.92	00:16:32:52.004
13.69	4.14	7.9	00:16:33:07.004
13.7	4.14	7.92	00:16:33:22.004
13.7	4.14	7.92	00:16:33:37.004
13.7	4.14	7.89	00:16:33:52.004
13.69	4.14	7.89	00:16:34:07.004
13.7	4.14	7.92	00:16:34:22.004
13.7	4.14	7.94	00:16:34:37.004
13.69	4.14	7.93	00:16:34:52.004
13.69	4.14	7.92	00:16:35:07.004
13.69	4.15	7.95	00:16:35:22.004
13.69	4.15	7.97	00:16:35:37.004
13.7	4.14	7.97	00:16:35:52.004
13.69	4.14	7.96	00:16:36:07.004

13.7	4.14	7.93 00:16:36:22.004
13.69	4.14	7.94 00:16:36:37.004
13.69	4.14	7.97 00:16:36:52.004
13.69	4.13	7.96 00:16:37:07.004
13.7	4.13	7.91 00:16:37:22.004
13.69	4.14	7.89 00:16:37:37.004
13.69	4.14	7.89 00:16:37:52.004
13.69	4.14	7.91 00:16:38:07.004
13.69	4.14	7.91 00:16:38:22.004
13.69	4.15	7.91 00:16:38:37.004
13.69	4.14	7.91 00:16:38:52.004
13.68	4.14	7.93 00:16:39:07.004
13.69	4.14	7.91 00:16:39:22.004
13.69	4.14	7.9 00:16:39:37.004
13.68	4.14	7.9 00:16:39:52.004
13.68	4.14	7.94 00:16:40:07.004
13.69	4.13	7.93 00:16:40:22.004
13.69	4.14	7.88 00:16:40:37.004
13.68	4.14	7.9 00:16:40:52.004
13.68	4.14	7.95 00:16:41:07.004
13.68	4.14	7.92 00:16:41:22.004
13.69	4.14	7.89 00:16:41:37.004
13.68	4.14	7.87 00:16:41:52.004
13.68	4.14	7.91 00:16:42:07.004
13.69	4.14	7.94 00:16:42:22.004
13.68	4.14	7.92 00:16:42:37.004
13.67	4.15	7.87 00:16:42:52.004
13.67	4.15	7.89 00:16:43:07.004
13.68	4.14	7.89 00:16:43:22.004
13.68	4.14	7.9 00:16:43:37.004
13.68	4.14	7.91 00:16:43:52.004
13.68	4.14	7.91 00:16:44:07.004
13.68	4.14	7.9 00:16:44:22.004
13.68	4.14	7.88 00:16:44:37.004
13.69	4.14	7.84 00:16:44:52.004
13.67	4.14	7.83 00:16:45:07.004
13.68	4.14	7.94 00:16:45:22.004
13.69	4.13	7.96 00:16:45:37.004
13.69	4.13	7.92 00:16:45:52.004
13.69	4.14	7.89 00:16:46:07.004
13.68	4.14	7.88 00:16:46:22.004
13.68	4.14	7.87 00:16:46:37.004
13.68	4.14	7.89 00:16:46:52.004
13.69	4.14	7.93 00:16:47:07.004
13.68	4.14	7.89 00:16:47:22.004
13.67	4.15	7.87 00:16:47:37.004
13.68	4.14	7.87 00:16:47:52.004
13.69	4.14	7.88 00:16:48:07.004
13.68	4.13	7.85 00:16:48:22.004

13.68	4.13	7.84 00:16:48:37.004
13.68	4.14	7.84 00:16:48:52.004
13.69	4.13	7.81 00:16:49:07.004
13.68	4.14	7.82 00:16:49:22.004
13.68	4.14	7.83 00:16:49:37.004
13.69	4.14	7.91 Average

GE-Energy & Environmental Research

Post 8A-85-3 Pre 8A-65-1

15 sec Averaged data

For 5-08-2001 @ 16:51:27.23

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0	-0.02	0.02	00:16:51:27.004
0.01	-0.02	0.01	00:16:51:42.004
0.01	-0.02	0.01	00:16:51:57.004
0.01	-0.02	0.01	00:16:52:12.004
0.01	-0.02	0.01	00:16:52:27.004
0	-0.02	0.01	Zero
-0.03	0.02	0	00:16:52:57.004
2.67	0.97	0.9	00:16:53:12.004
3.32	0.32	2.24	00:16:53:27.004
0.05	0.01	2.69	00:16:53:42.004
5.58	0.05	1.38	00:16:53:57.004
11.74	0	0.48	00:16:54:12.004
11.9	0	1.04	00:16:54:27.004
11.92	0	0.39	00:16:54:42.004
11.93	0	0.09	00:16:54:57.004
11.93	-0.01	0.07	CO
11.93	-0.01	0.08	00:16:55:27.004
11.94	-0.01	0.09	00:16:55:42.004
10.19	1.71	0.09	00:16:55:57.004
0.81	7.67	0.09	00:16:56:12.004
0.04	7.9	0.09	00:16:56:27.004
0.02	7.94	0.09	00:16:56:42.004
0.01	7.95	0.09	00:16:56:57.004
-0.01	7.97	0.09	00:16:57:12.004
-0.01	7.97	0.09	CO
-0.01	7.98	0.09	00:16:57:42.004
-0.01	7.98	0.09	CO2
-0.02	7.98	0.09	00:16:58:12.004
-0.02	7.97	0.08	00:16:58:27.004
-0.01	7.98	0.07	00:16:58:42.004
0.01	6.99	0.08	00:16:58:57.004
0.02	0.7	0.46	00:16:59:12.004
0.01	0.11	1.84	00:16:59:27.004
0	0.07	7.63	00:16:59:42.004
0	0.04	9.67	00:16:59:57.004
0	0.03	9.74	00:17:00:12.004
0	0.02	9.79	00:17:00:27.004
0	0.01	9.85	00:17:00:42.004
0	0.01	10.02	00:17:00:57.004
0	0.01	10.03	00:17:01:12.004
-0.01	0	10.03	Nox
0	0	10.03	00:17:01:42.004
0	0	10.04	00:17:01:57.004

0	0	10.05 00:17:02:12.004
-0.01	0	10.03 00:17:02:27.004
-0.01	0	9.95 00:17:02:42.004
-0.03	0	9.49 00:17:02:57.004
4.37	0.73	7.39 00:17:03:12.004
9.02	2.03	4.14 00:17:03:27.004
10.29	2.1	2.94 00:17:03:42.004
11.29	2.03	2.59 00:17:03:57.004
12.31	2	2 00:17:04:12.004
13.1	1.86	1.35 00:17:04:27.004
12.53	1.83	0.74 00:17:04:42.004
11.03	1.8	0.43 00:17:04:57.004
9.45	1.81	2.83 00:17:05:12.004
8.06	1.85	5.55 00:17:05:27.004
6.96	1.9	2.43 00:17:05:42.004
6.2	1.86	0.72 00:17:05:57.004
5.52	1.83	0.45 00:17:06:12.004
5.45	1.88	0.57 00:17:06:27.004
5.39	1.99	0.61 00:17:06:42.004
5.36	2.08	0.56 00:17:06:57.004
5.32	2.09	0.49 00:17:07:12.004
5.24	2.11	0.42 00:17:07:27.004
5.15	2.14	0.36 00:17:07:42.004
5.11	2.1	0.33 00:17:07:57.004
5.06	2.2	0.31 00:17:08:12.004
5.11	2.17	0.3 00:17:08:27.004
5.14	2.18	0.3 00:17:08:42.004
5.09	2.18	0.29 00:17:08:57.004
5.1	2.18	0.28 00:17:09:12.004
5	2.18	0.28 00:17:09:27.004
5.07	2.16	0.26 00:17:09:42.004
5.13	2.17	0.25 00:17:09:57.004
5.17	2.15	0.25 00:17:10:12.004
5.07	2.08	0.25 00:17:10:27.004
3.02	0.36	0.74 00:17:10:42.004
9.95	3.19	3.92 00:17:10:57.004
13.71	4.05	6.61 00:17:11:12.004
13.75	4.07	7.77 00:17:11:27.004
13.75	4.07	8.18 00:17:11:42.004
13.76	4.08	8.16 CO
13.76	4.07	8.13 00:17:12:12.004
13.76	4.08	8.14 00:17:12:27.004
13.76	4.08	8.2 00:17:12:42.004
13.76	4.08	8.25 00:17:12:57.004
13.77	4.07	8.18 00:17:13:12.004
13.76	4.08	8.09 00:17:13:27.004
13.76	4.08	8.13 00:17:13:42.004
13.77	4.08	8.17 00:17:13:57.004
13.77	4.09	8.17 00:17:14:12.004

13.76	4.08	8.14 00:17:14:27.004
13.76	4.08	8.14 00:17:14:42.004
13.76	4.09	8.14 00:17:14:57.004
13.76	4.09	8.14 00:17:15:12.004
13.78	4.08	8.15 00:17:15:27.004
13.79	4.08	8.14 00:17:15:42.004
13.79	4.09	8.14 00:17:15:57.004
13.79	4.09	8.14 00:17:16:12.004
13.79	4.09	8.15 00:17:16:27.004
13.78	4.09	8.14 00:17:16:42.004
13.78	4.08	8.16 00:17:16:57.004
13.8	4.08	8.13 00:17:17:12.004
13.79	4.09	8.08 00:17:17:27.004
13.78	4.09	8.16 00:17:17:42.004
13.79	4.09	8.23 00:17:17:57.004
13.79	4.09	8.2 00:17:18:12.004
13.79	4.09	8.16 00:17:18:27.004
13.8	4.09	8.17 00:17:18:42.004
13.78	4.09	8.16 00:17:18:57.004
13.78	4.09	8.13 00:17:19:12.004
13.77	4.09	8.11 00:17:19:27.004
13.78	4.09	8.13 00:17:19:42.004
13.78	4.09	8.15 00:17:19:57.004
13.78	4.09	8.14 00:17:20:12.004
13.78	4.08	8.11 00:17:20:27.004
13.78	4.08	8.19 00:17:20:42.004
13.78	4.08	8.16 THC
13.78	4.09	8.13 00:17:21:12.004
13.78	4.09	8.13 00:17:21:27.004
13.77	4.08	8.12 00:17:21:42.004
13.77	4.08	8.08 00:17:21:57.004

65% Load

GE-Energy & Environmental Research

Direct Cal 5-8-01

15 sec Averaged data

For 5-08-2001 @ 07:24:32.42

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
-0.03	0.02	0.42	00:07:24:32.002
-0.03	0.03	1.31	00:07:24:47.002
-0.02	0	0.71	00:07:25:02.002
-0.02	-0.01	-0.04	00:07:25:17.002
-0.03	-0.01	-0.04	00:07:25:32.002
-0.01	-0.01	-0.05	00:07:25:47.002
0.01	-0.01	-0.04	00:07:26:02.002
0	0	-0.04	00:07:26:17.002
0	0	-0.04	00:07:26:32.002
0	0	-0.05	00:07:26:47.002
0	0	-0.04	Zero
-0.01	0	-0.05	00:07:27:17.002
-0.01	0	-0.04	00:07:27:32.002
-0.01	0	-0.05	00:07:27:47.002
-0.01	0	-0.04	00:07:28:02.002
0	0	-0.05	00:07:28:17.002
-0.01	0	-0.05	00:07:28:32.002
-0.01	0	-0.04	00:07:28:47.002
-0.01	0	-0.05	00:07:29:02.002
-0.01	0	-0.05	00:07:29:17.002
-0.01	0	-0.04	00:07:29:32.002
-0.01	0	-0.04	00:07:29:47.002
-0.01	0	-0.04	00:07:30:02.002
2.82	0.3	-0.05	00:07:30:17.002
20.37	0.03	0.06	00:07:30:32.002
21.14	0	0.42	00:07:30:47.002
21.15	0	0.22	00:07:31:02.002
21.13	0	-0.05	00:07:31:17.002
21.01	0	-0.04	00:07:31:32.002
21.01	0	-0.04	00:07:31:47.002
21	0.01	-0.05	O2 High
20.99	0	-0.05	00:07:32:17.002
20.99	0	-0.05	00:07:32:32.002
20.98	0	-0.04	00:07:32:47.002
19.22	0	-0.04	00:07:33:02.002
12.33	0	-0.04	00:07:33:17.002
12.16	0	-0.04	00:07:33:32.002
12.13	0	-0.04	00:07:33:47.002
12.12	0	-0.04	00:07:34:02.002
12.12	0	-0.04	O2 Mid
12.12	0	-0.05	00:07:34:32.002
12.11	0	-0.04	00:07:34:47.002
12.12	0	-0.05	00:07:35:02.002

12.08	0	-0.04	00:07:35:17.002
4.18	6.57	-0.04	00:07:35:32.002
0.01	8.09	-0.05	00:07:35:47.002
-0.03	8.09	-0.04	00:07:36:02.002
-0.04	8.1	-0.04	00:07:36:17.002
-0.04	8.1	-0.05	00:07:36:32.002
-0.04	8.07	-0.04	00:07:36:47.002
-0.05	8	-0.04	00:07:37:02.002
-0.05	8	-0.05	CO2 High
-0.05	8	-0.05	00:07:37:32.002
-0.05	8	-0.05	00:07:37:47.002
-0.05	8.01	-0.05	00:07:38:02.002
-0.05	8.01	-0.05	00:07:38:17.002
-0.05	8.01	-0.05	00:07:38:32.002
-0.06	7.35	-0.04	00:07:38:47.002
-0.04	5.07	-0.05	00:07:39:02.002
-0.05	5.07	-0.05	00:07:39:17.002
-0.05	5.07	-0.03	CO2 Mid
-0.04	5.07	-0.01	00:07:39:47.002
-0.05	5.06	0	00:07:40:02.002
-0.07	5.04	0	00:07:40:17.002
0.1	2.27	0	00:07:40:32.002
0.04	0.06	1.12	00:07:40:47.002
-0.03	0.04	7.44	00:07:41:02.002
-0.03	0.03	14.65	00:07:41:17.002
-0.03	0.02	17.97	00:07:41:32.002
-0.04	0.02	18.44	00:07:41:47.002
-0.04	0.01	18.49	00:07:42:02.002
-0.04	0.01	18.48	00:07:42:17.002
-0.04	0.01	18.49	00:07:42:32.002
-0.04	0.01	18.47	00:07:42:47.002
-0.04	0.01	18.27	00:07:43:02.002
-0.04	0.01	18.06	00:07:43:17.002
-0.04	0.01	17.99	00:07:43:32.002
-0.03	0.01	18	00:07:43:47.002
0.01	0.01	18.01	00:07:44:02.002
0.01	0.01	17.99	00:07:44:17.002
0.01	0.01	17.97	00:07:44:32.002
0.01	0.01	18.01	00:07:44:47.002
0.01	0.01	17.99	NOx High
0.02	0.01	17.99	00:07:45:17.002
-0.01	0.01	18.01	00:07:45:32.002
0.02	0.05	17.26	00:07:45:47.002
0.01	0.01	13.59	00:07:46:02.002
0	0.01	11.05	00:07:46:17.002
0.01	0.01	10.18	00:07:46:32.002
0.01	0.01	9.98	00:07:46:47.002
0.01	0.01	10.01	00:07:47:02.002
0.01	0.01	10	00:07:47:17.002

0.01	0.01	10	NOx Mid
0	0.01	10.01	00:07:47:47.002
0.01	0.01	10.01	00:07:48:02.002
0	0.01	10.01	00:07:48:17.002
-0.02	0.01	10.01	00:07:48:32.002
0	0.01	10.27	00:07:48:47.002
0	0	8.27	00:07:49:02.002
0.01	0	6.1	00:07:49:17.002
0.01	0	5.99	00:07:49:32.002
0	0	5.99	00:07:49:47.002
0.01	0.01	5.99	00:07:50:02.002
0	0	5.99	00:07:50:17.002
0.01	0.01	5.99	00:07:50:32.002
0.01	0.01	5.99	00:07:50:47.002
0.01	0.01	5.99	00:07:51:02.002
0.01	0.01	5.99	NOx Low
0.01	0	5.99	00:07:51:32.002
0	0	5.99	00:07:51:47.002
-0.01	0	5.98	00:07:52:02.002
0.07	0.07	6.07	00:07:52:17.002
0.06	0.06	5.3	00:07:52:32.002
0.02	0.02	1.41	00:07:52:47.002
0.01	0.01	0.63	00:07:53:02.002
0.01	0.01	0.6	00:07:53:17.002
0	0.01	0.25	00:07:53:32.002
0	0.01	0.09	00:07:53:47.002
0	0.01	0.04	00:07:54:02.002
0	0.01	0.04	00:07:54:17.002
0	0.01	0.02	00:07:54:32.002
0	0	0.02	00:07:54:47.002
0	0	0.02	00:07:55:02.002
0	0	0.01	00:07:55:17.002
0	0	0.02	00:07:55:32.002
0	0	0.01	00:07:55:47.002
-0.01	0	0.01	00:07:56:02.002
-0.01	0	0.01	00:07:56:17.002
-0.01	0	0.01	00:07:56:32.002
-0.01	0	0.01	00:07:56:47.002
-0.01	0	0.01	00:07:57:02.002
-0.01	0	0.01	CO High
-0.01	0	-0.01	00:07:57:32.002
-0.01	0	-0.01	00:07:57:47.002
-0.01	0	-0.01	00:07:58:02.002
-0.02	0	-0.01	00:07:58:17.002
-0.02	0.01	0	00:07:58:32.002
-0.01	0	0	00:07:58:47.002
-0.01	0	-0.01	00:07:59:02.002
-0.01	0	0	00:07:59:17.002
-0.01	0.01	-0.01	00:07:59:32.002

-0.01	0.01	0 00:07:59:47.002
-0.01	0.01	0 00:08:00:02.002
-0.02	0.01	0 00:08:00:17.002
-0.01	0.01	0 00:08:00:32.002
-0.01	0	0 00:08:00:47.002
-0.01	0	-0.01 CO Mid
-0.02	0	-0.01 00:08:01:17.002
1.75	0.03	0 00:08:01:32.002
4.27	0.04	0 00:08:01:47.002
5.6	0.05	0 00:08:02:02.002
7.12	0.05	0 00:08:02:17.002
2.78	0.02	-0.01 00:08:02:32.002
0.02	0	0 00:08:02:47.002
0	0	-0.01 00:08:03:02.002
0	0.01	-0.01 00:08:03:17.002
-0.01	0.01	0 00:08:03:32.002
0	0	0 00:08:03:47.002
-0.01	0	-0.01 00:08:04:02.002
-0.01	0	-0.01 00:08:04:17.002
-0.01	0	0 00:08:04:32.002
-0.01	0	-0.01 00:08:04:47.002
-0.01	0	0 00:08:05:02.002
-0.01	0	-0.01 00:08:05:17.002
-0.02	0	-0.01 00:08:05:32.002
-0.01	0	0 00:08:05:47.002
-0.01	0	0 CO Low
-0.01	0	-0.01 00:08:06:17.002
-0.01	0	0 00:08:06:32.002

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GE-EER

CALIBRATION ERROR, BIAS, DRIFT AND O2-CORRECTED CONCENTRATIONS

PLANT: Florida Power and Light	RUN NUMBER: Run 8A-65-1	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 17:30	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 17:54	CHECKED BY:
START DATE: 5/8/01		
END DATE: 5/8/01	MAXIMUM RESPONSE TIME SEC. 60	

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		52	31	58		
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.0%	0.0%	-0.1%		
	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, C _{bi} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	11.93	7.98	10.03		
	ZERO	0.00	-0.02	0.01		
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	-0.3%	-0.2%	0.1%		
	ZERO	0.0%	-0.2%	0.3%		
FINAL BIAS CHECK, C _{bf} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.97	7.98	10.01		
	ZERO	0.05	-0.01	0.09		
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/Span)x100%	UPSCALE	-0.1%	-0.2%	0.0%		
	ZERO	0.2%	-0.1%	0.7%		
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/Span)x100%	UPSCALE	0.2%	0.0%	-0.1%		
	ZERO	0.2%	0.1%	0.4%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.03	-0.02	0.05		
AVERAGE % BIAS	UPSCALE	-0.2%	-0.2%	0.1%		
	ZERO	0.1%	-0.2%	0.5%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		11.95	7.98	10.02		
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		13.76	4.08	8.14		

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.82	4.10	8.11		
15% O2 CORRECTION, C _{15%} = C _{gas} * 5.9 / (20.9 - % O2)		3.42	6.76		

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GE-EER

CALIBRATION ERROR, BIAS, DRIFT AND O2-CORRECTED CONCENTRATIONS

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8A Gas Turbine START DATE: 5/8/01 END DATE: 5/8/01		RUN NUMBER: Run 8A-65-2 RUN START TIME: 18:40 RUN END TIME: 19:04 MAXIMUM RESPONSE TIME SEC.: 60	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:		
SPECIES		O2	CO2	NOx	
LOCATION		Stack	Stack	Stack	
CONCENTRATION UNIT		% dry	% dry	ppmvd	
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	
SPAN		25	10	20	
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	
	MID	12.00	5.00	10.00	
	LO			6.00	
	ZERO	0.0	0.0	0.00	
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99	
	MID	21.12	5.07	10.00	
	LO			5.99	
	ZERO	0.00	0.00	-0.04	
RESPONSE TIME (SECONDS)		32	31	58	
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	-0.1%	
Ei = ((Cma - Cai)/Span)x100%	MID	36.5%	0.7%	0.0%	
	LO	N/A	N/A	0.0%	
	ZERO	N/A	N/A	-0.2%	
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.97	7.98	10.01	
	ZERO	0.05	-0.01	0.09	
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	-0.1%	-0.2%	0.0%	
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.2%	-0.1%	0.7%	
FINAL BIAS CHECK, Cbf	UPSCALE	12.00	8.01	10.05	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.04	0.01	0.07	
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.0%	0.1%	0.3%	
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.2%	0.1%	0.6%	
DRIFT CHECK, D	UPSCALE	0.1%	0.3%	0.2%	
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.2%	-0.1%	
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.05	0.00	0.08	
Co = (Cbi.zero + Cbf.zero)/2					
AVERAGE % BIAS	UPSCALE	-0.1%	0.0%	0.2%	
	ZERO	0.2%	0.0%	0.6%	
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		11.99	8.00	10.03	
Cm = (Cbi.upscale + Cbf.upscale)/2					
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.76	4.12	8.01	

RESULTS

DRIFT CORRECTED CONCENTRATION, $C_{gas} = (C_{avg} - C_o) \times C_{ma} / (C_m - C_o)$	13.78	4.12	7.97	
15% O2 CORRECTION, $C_{15\%} = C_{gas} \times 5.9 / (20.9 - \% O_2)$		3.42	6.61	

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GE-EER

CALIBRATION ERROR, BIAS, DRIFT AND O2-CORRECTED CONCENTRATIONS

PLANT: Florida Power and Light	RUN NUMBER: Run 8A-65-3	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 19:40	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 20:04	CHECKED BY:
START DATE: 5/8/01		
END DATE: 5/8/01	MAXIMUM RESPONSE TIME SEC. 60	

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.0%	0.0%	-0.1%		
	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	11.97	7.98	10.01		
	ZERO	0.05	-0.01	0.09		
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi - Cai)/Span)x100%	UPSCALE	-0.1%	-0.2%	0.0%		
	ZERO	0.2%	-0.1%	0.7%		
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.00	8.01	10.04		
	ZERO	0.01	0.00	0.00		
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/Span)x100%	UPSCALE	0.0%	0.1%	0.2%		
	ZERO	0.0%	0.0%	0.2%		
DRIFT CHECK, D D = ((Cbf - Cbi)/(Span))x100%	UPSCALE	0.1%	0.3%	0.1%		
	ZERO	-0.2%	0.1%	-0.5%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co = (Cbi.zero + Cbf.zero)/2		0.03	-0.01	0.05		
AVERAGE % BIAS	UPSCALE	-0.1%	0.0%	0.1%		
	ZERO	0.1%	-0.1%	0.4%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm = (Cbi.upscale + Cbf.upscale)/2		11.99	8.00	10.03		
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.77	4.12	8.02		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.79	4.13	7.99		
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.42	6.63		

Energy & Environmental Research

Run 8A-65-1

1 minute averaged data

For 5-08-2001 @ 17:30:07.77

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.76	4.08	8.13	00:17:30:07.004
13.76	4.09	8.11	00:17:31:07.004
13.77	4.09	8.19	00:17:32:07.004
13.77	4.08	8.17	00:17:33:07.004
13.77	4.08	8.17	00:17:34:07.004
13.76	4.08	8.2	00:17:35:07.004
13.76	4.09	8.17	00:17:36:07.004
13.76	4.09	8.16	00:17:37:07.004
13.76	4.09	8.22	00:17:38:07.004
13.76	4.08	8.16	00:17:39:07.004
13.76	4.08	8.15	00:17:40:07.004
13.76	4.08	8.16	00:17:41:07.004
13.76	4.08	8.14	00:17:42:07.004
13.76	4.09	8.1	00:17:43:07.004
13.76	4.09	8.13	00:17:44:07.004
13.76	4.08	8.08	00:17:45:07.004
13.76	4.08	8.11	00:17:46:07.004
13.76	4.09	8.11	00:17:47:07.004
13.76	4.08	8.11	00:17:48:07.004
13.77	4.08	8.12	00:17:49:07.004
13.77	4.08	8.09	00:17:50:07.004
13.77	4.08	8.13	00:17:51:07.004
13.76	4.09	8.1	00:17:52:07.004
13.76	4.09	8.1	00:17:53:07.004
13.76	4.09	8.1	00:17:54:07.004
13.76	4.08	8.14	Average

Energy & Environmental Research
 Post Cal 8A-65-1 Pre 8A-65-2
 1 minute averaged data
 For 5-08-2001 @ 18:08:42.61

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.05	-0.01	0.09	Zero
0.03	-0.01	0.08	00:18:09:42.004
0.02	-0.01	0.08	00:18:10:42.004
5.08	0.01	0.09	00:18:11:42.004
11.95	-0.01	0.08	THC Zero
11.97	-0.01	0.06	O2
11.98	-0.01	0.06	00:18:14:42.000
1.89	6.9	0.06	00:18:15:42.000
0	7.98	0.06	00:18:16:42.000
0	7.98	0.05	CO2
0.02	2.94	1.88	00:18:18:42.000
0.01	0.03	9.64	00:18:19:42.000
0.01	0.01	10.01	NOx
0.01	0	9.98	00:18:21:42.000
1.72	0.43	8.06	00:18:22:42.000
9.73	2.13	2.56	00:18:23:42.000
13.08	2.11	0.53	00:18:24:42.000
13.93	2.15	0.21	00:18:25:42.000
10.45	2.3	0.11	00:18:26:42.000
8.81	2.25	0.27	00:18:27:42.000
7.66	2.3	0.26	CO
6.85	2.35	0.1	00:18:29:42.000
6.4	2.3	0.08	00:18:30:42.000
6.7	1.97	0.08	00:18:31:42.000
9.3	0.54	0.07	00:18:32:42.000
11.77	0.32	0.04	THC Zero
13.7	0.25	0.04	00:18:34:42.000
14.7	0.21	0.04	00:18:35:42.000
12.02	0.2	0.06	00:18:36:42.000

Energy & Environmental Research

Run 8A-65-2

1 minute averaged data

For 5-08-2001 @ 18:40:06.77

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.76	4.11	7.78	00:18:40:06.000
13.76	4.11	7.85	00:18:41:06.000
13.76	4.11	7.86	00:18:42:06.000
13.76	4.12	7.89	00:18:43:06.000
13.76	4.12	7.98	00:18:44:06.000
13.76	4.12	7.94	00:18:45:06.000
13.76	4.12	7.97	00:18:46:06.000
13.76	4.12	8.01	00:18:47:06.000
13.76	4.12	8.1	00:18:48:06.000
13.76	4.12	8.1	00:18:49:06.000
13.76	4.12	8.1	00:18:50:06.000
13.76	4.12	8.04	00:18:51:06.000
13.76	4.12	8.03	00:18:52:06.000
13.76	4.12	8.06	00:18:53:06.000
13.77	4.12	8.08	00:18:54:06.000
13.76	4.12	8.11	00:18:55:06.000
13.76	4.12	8.16	00:18:56:06.000
13.77	4.13	8.07	00:18:57:06.000
13.76	4.13	8.03	00:18:58:06.000
13.77	4.13	7.96	00:18:59:06.000
13.77	4.13	7.95	00:19:00:06.000
13.77	4.13	8	00:19:01:06.000
13.77	4.13	8.05	00:19:02:06.000
13.77	4.13	8.07	00:19:03:06.000
13.77	4.13	8.08	00:19:04:06.000
13.76	4.12	8.01	Average

GE-Energy & Environmental Research

Post 8A-65-2 Pre 8A-65-3

15 sec Averaged data

For 5-08-2001 @ 19:06:17.09

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.18	0.05		6.12 00:19:06:17.000
0.08	0.03		4.45 00:19:06:32.000
0.04	0.01		1.79 00:19:06:47.000
0.04	0.01		0.47 Zero
0.03	0.01		0.21 00:19:07:17.000
0.02	0.01		0.2 00:19:07:32.000
0.02	0		0.2 00:19:07:47.000
0.03	0		0.18 00:19:08:02.000
0.02	0		0.18 00:19:08:17.000
0.02	0.01		0.18 00:19:08:32.000
0.19	0.03		0.18 00:19:08:47.000
9.76	0.05		0.3 00:19:09:02.000
11.93	0		0.71 00:19:09:17.000
11.97	0		0.45 00:19:09:32.000
11.98	0		0.14 00:19:09:47.000
11.98	0		0.12 00:19:10:02.000
11.99	0		0.11 00:19:10:17.000
11.99	0		0.11 00:19:10:32.000
12	0		0.11 O2
12	0		0.09 00:19:11:02.000
11.99	0		0.09 00:19:11:17.000
11.99	0		0.09 00:19:11:32.000
9.04	2.68		0.09 00:19:11:47.000
0.4	7.86		0.09 00:19:12:02.000
0.05	7.97		0.09 00:19:12:17.000
0.02	7.99		0.09 00:19:12:32.000
0.02	8		0.07 00:19:12:47.000
0.01	8.01		0.07 CO2
0.01	8.01		0.07 00:19:13:17.000
0.01	8.02		0.07 00:19:13:32.000
0	8.02		0.08 00:19:13:47.000
0	8.01	0.07	NOX Zero
0	8		0.07 00:19:14:17.000
0.06	1.88		0.05 00:19:14:32.000
0.03	0.12		2.96 00:19:14:47.000
0.02	0.06		6.37 00:19:15:02.000
0.03	0.04		9.18 00:19:15:17.000
0.02	0.03		9.97 00:19:15:32.000
0.02	0.02		10.02 00:19:15:47.000
0.02	0.01	10.05	NOX
0.02	0.01	10.05	00:19:16:17.000
0.02	0.01	10.07	00:19:16:32.000
0.02	0.01	10.07	00:19:16:47.000

0.02	0.01	10.05 00:19:17:02.000
0	0.02	10.07 00:19:17:17.000
3.55	1.23	10.45 00:19:17:32.000
5.62	2.1	8.53 00:19:17:47.000
6.49	2.26	4.42 00:19:18:02.000
7.4	2.34	2.97 00:19:18:17.000
8.47	2.34	2 00:19:18:32.000
9.6	2.3	0.97 00:19:18:47.000
10.68	2.26	0.55 00:19:19:02.000
11.68	2.26	0.38 00:19:19:17.000
12.52	2.22	0.3 00:19:19:32.000
13.26	2.22	0.22 00:19:19:47.000
13.85	2.18	0.18 00:19:20:02.000
14.31	2.18	0.19 00:19:20:17.000
14.69	2.17	0.29 00:19:20:32.000
14.84	2.16	2.03 00:19:20:47.000
14.54	2.27	3.45 00:19:21:02.000
13.71	2.32	1.39 00:19:21:17.000
12.59	2.38	0.47 00:19:21:32.000
11.55	2.46	0.17 00:19:21:47.000
10.82	2.44	0.16 00:19:22:02.000
10.21	2.46	0.14 00:19:22:17.000
9.78	2.44	0.16 00:19:22:32.000
9.48	2.35	0.25 00:19:22:47.000
9.03	2.36	0.35 00:19:23:02.000
8.72	2.39	0.43 00:19:23:17.000
8.5	2.4	0.41 00:19:23:32.000
8.41	2.38	0.32 00:19:23:47.000
8.09	2.35	0.24 00:19:24:02.000
7.96	2.3	0.16 00:19:24:17.000
7.64	2.33	0.14 00:19:24:32.000
7.42	2.37	0.11 00:19:24:47.000
7.4	2.37	0.12 00:19:25:02.000
7.28	2.32	0.11 00:19:25:17.000
7.12	2.38	0.1 00:19:25:32.000
7.01	2.3	0.1 00:19:25:47.000
6.87	2.32	0.09 00:19:26:02.000
6.82	2.35	0.1 00:19:26:17.000
6.66	2.37	0.09 00:19:26:32.000
6.62	2.34	0.09 00:19:26:47.000
6.58	2.34	0.1 CO
6.55	2.38	0.09 00:19:27:17.000
6.56	2.32	0.09 THC Zero
6.63	2.33	0.09 00:19:27:47.000
6.74	2.39	0.1 00:19:28:02.000
6.93	2.27	0.08 00:19:28:17.000
7.47	1.56	0.07 00:19:28:32.000
7.54	1.21	0.08 00:19:28:47.000
7.38	1.27	0.06 00:19:29:02.000

7.28	1.37	0.03 00:19:29:17.000
7.24	1.49	0.02 00:19:29:32.000
7.19	1.6	0.02 00:19:29:47.000
7.13	1.71	0.01 00:19:30:02.000
7.1	1.82	0.01 00:19:30:17.000
7.05	1.91	0.02 00:19:30:32.000
7	2	0.02 THC
6.97	2.08	0.01 00:19:31:02.000
6.93	2.14	0.02 00:19:31:17.000
6.9	2.23	0.01 00:19:31:32.000

Energy & Environmental Research

Run 8A-65-3

1 minute averaged data

For 5-08-2001 @ 19:40:29.27

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.78	4.11	7.95	00:19:40:29.000
13.78	4.12	7.98	00:19:41:29.000
13.78	4.12	7.92	00:19:42:29.000
13.78	4.13	8.02	00:19:43:29.000
13.78	4.13	8.03	00:19:44:29.000
13.78	4.13	8.01	00:19:45:29.000
13.78	4.13	8.03	00:19:46:29.000
13.78	4.13	8.01	00:19:47:29.000
13.77	4.12	8.04	00:19:48:29.000
13.75	4.11	8.03	00:19:49:29.000
13.76	4.11	8.06	00:19:50:29.000
13.76	4.11	8.05	00:19:51:29.000
13.76	4.11	8.03	00:19:52:29.000
13.76	4.11	8.02	00:19:53:29.000
13.76	4.11	8.05	00:19:54:29.000
13.76	4.12	8.02	00:19:55:29.000
13.76	4.11	8.09	00:19:56:29.000
13.76	4.11	8.03	00:19:57:29.000
13.76	4.11	8.07	00:19:58:29.000
13.76	4.11	8.05	00:19:59:29.000
13.76	4.11	8.01	00:20:00:29.000
13.76	4.11	8.02	00:20:01:29.000
13.76	4.11	8.03	00:20:02:29.000
13.76	4.11	8.04	00:20:03:29.000
13.76	4.11	8.01	00:20:04:29.000
□ 13.77	4.12	8.02	Average

GE-Energy & Environmental Research
 Post 8A-65-3 Pre 8A-50-1
 15 sec Averaged data
 For 5-08-2001 @ 20:08:28.51

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.05	0.02	0.01	00:20:08:28.000
0.04	0.02	0.01	00:20:08:43.000
0.04	0.01	0.01	00:20:08:58.000
0.04	0.01	-0.01	00:20:09:13.000
0.02	0	-0.01	00:20:09:28.000
0.02	0	0	00:20:09:43.000
0.02	0	-0.01	00:20:09:58.000
0.02	0	0	00:20:10:13.000
0.02	0	-0.01	00:20:10:28.000
0.02	0	0	00:20:10:43.000
0.02	0	-0.01	00:20:10:58.000
0.02	0	0	00:20:11:13.000
0.03	0	-0.01	00:20:11:28.000
0.01	0	-0.01	00:20:11:43.000
0.02	0	0	00:20:11:58.000
0.01	0	0	Zero
0.03	0	0	00:20:12:28.000
0.02	0	-0.01	00:20:12:43.000
0.01	0	0	00:20:12:58.000
0.02	0	0	00:20:13:13.000
0	0	0	00:20:13:28.000
0.01	0	-0.01	00:20:13:43.000
0.01	0	0	00:20:13:58.000
4.63	0.07	-0.01	00:20:14:13.000
11.73	0.01	0	00:20:14:28.000
11.95	0	0	00:20:14:43.000
11.97	0	-0.01	00:20:14:58.000
11.98	0	0	00:20:15:13.000
11.99	0	0	00:20:15:28.000
12	0	0	O2
12	0	0	00:20:15:58.000
11.99	0	-0.01	00:20:16:13.000
12	0	-0.01	00:20:16:28.000
12	0	-0.01	00:20:16:43.000
11.99	0	-0.01	00:20:16:58.000
12	0	0	00:20:17:13.000
9.64	2.21	0	00:20:17:28.000
0.59	7.77	-0.01	00:20:17:43.000
0.05	7.93	-0.01	00:20:17:58.000
0.03	7.96	0	00:20:18:13.000
0.01	7.99	-0.01	00:20:18:28.000
0.01	7.99	-0.01	00:20:18:43.039
0.01	8	-0.01	00:20:18:58.000

0.88	0.13	0.29 00:20:31:28.000
0.81	0.1	0.12 00:20:31:43.000
0.76	0.08	0.09 00:20:31:58.000
0.71	0.07	0.06 00:20:32:13.000
0.68	0.06	0.06 00:20:32:28.000
0.65	0.06	0.05 00:20:32:43.000
0.63	0.06	0.06 00:20:32:58.000
0.6	0.06	0.06 00:20:33:13.000
0.58	0.05	0.06 00:20:33:28.000
0.57	0.05	0.06 00:20:33:43.000
0.55	0.05	0.06 CO
0.53	0.05	0.05 00:20:34:13.000
0.51	0.05	0.03 00:20:34:28.000
0.51	0.05	0.04 00:20:34:43.000
0.49	0.05	0.04 00:20:34:58.000
0.49	0.05	0.04 00:20:35:13.000
0.58	0.08	0.04 00:20:35:28.000
0.79	0.76	0.28 00:20:35:43.000
0.66	0.49	0.69 00:20:35:58.000
0.43	0.15	0.61 00:20:36:13.000
0.36	0.2	0.34 00:20:36:28.000
1.31	0.06	0.02 00:20:36:43.000
1.03	0.04	0.01 00:20:36:58.000
0.53	0.04	0 00:20:37:13.000
0.29	0.04	0 00:20:37:28.000
0.18	0.04	0 00:20:37:43.000
0.13	0.04	0 THC
0.1	0.04	0 00:20:38:13.000
0.09	0.05	-0.01 00:20:38:28.000
0.1	0.05	0 00:20:38:43.000
0.09	0.05	0 00:20:38:58.000
0.8	0.07	0 00:20:39:13.000
9.55	3.04	0 00:20:39:28.000
13.87	4.02	0 00:20:39:43.000
13.93	4.03	0 00:20:39:58.000
13.94	4.04	0 00:20:40:13.000
13.93	4.05	0 00:20:40:28.000
13.94	4.04	1.53 00:20:40:43.000
13.94	4.04	4.1 00:20:40:58.000
13.94	4.05	6.08 00:20:41:13.000
13.94	4.06	6.98 00:20:41:28.000
13.95	4.06	6.98 00:20:41:43.000
13.93	4.06	7 00:20:41:58.000
13.95	4.05	7.02 00:20:42:13.000
13.95	4.05	6.99 00:20:42:28.000
13.94	4.05	6.99 00:20:42:43.000
13.94	4.06	7.05 00:20:42:58.000

0	8.01	0 00:20:19:13.000
0	8.01	0 00:20:19:28.000
0	8.01	-0.01 CO2
0	8.01	0 00:20:19:58.000
0	8.01	0 00:20:20:13.000
-0.01	8.02	0 00:20:20:28.000
0	8.02	-0.01 00:20:20:43.000
-0.01	8.02	-0.01 00:20:20:58.000
-0.01	8.02	-0.01 00:20:21:13.000
-0.01	8.02	0 00:20:21:28.000
-0.01	8.01	-0.01 00:20:21:43.000
-0.01	8.02	0 00:20:21:58.000
0.03	4.53	0 00:20:22:13.000
0.03	0.24	0 00:20:22:28.000
0.01	0.1	0 00:20:22:43.000
0.01	0.07	0 00:20:22:58.000
0.01	0.05	-0.01 00:20:23:13.000
0.01	0.04	0 00:20:23:28.000
0.01	0.04	-0.01 00:20:23:43.000
0.02	0.03	0 00:20:23:58.000
0.02	0.02	-0.01 00:20:24:13.000
0.02	0.02	0 00:20:24:28.000
0.02	0.02	-0.04 00:20:24:43.000
0.02	0.01	0.99 00:20:24:58.000
0.02	0.01	6.99 00:20:25:13.000
0.01	0.01	9.96 00:20:25:28.000
0.01	0.02	9.99 00:20:25:43.000
0.02	0.01	10.02 00:20:25:58.000
0.03	0.01	10.05 00:20:26:13.000
0.03	0.01	10.09 00:20:26:28.000
0.03	0.01	10.07 00:20:26:43.000
0.03	0.01	9.99 00:20:26:58.000
0.03	0	10.03 00:20:27:13.000
0.03	0	10.03 00:20:27:28.000
0.03	0	10.04 00:20:27:43.000
0.03	0	10.05 00:20:27:58.000
0.03	0	10.04 Nox
0.02	0	10.04 00:20:28:28.000
-0.01	0.01	10.03 00:20:28:43.000
-0.01	0.01	9.91 00:20:28:58.000
1.16	0.36	9.8 00:20:29:13.000
3.51	1.69	7 00:20:29:28.000
3.58	1.74	2.59 00:20:29:43.000
2.41	1.47	0.88 00:20:29:58.000
1.76	1.01	0.03 00:20:30:13.000
1.43	0.64	-0.06 00:20:30:28.000
1.23	0.4	0.52 00:20:30:43.000
1.07	0.25	0.24 00:20:30:58.000
0.96	0.17	0.34 00:20:31:13.000

50% Load

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GE-EER

CALIBRATION ERROR, BIAS, DRIFT AND O2-CORRECTED CONCENTRATIONS

PLANT: Florida Power and Light	RUN NUMBER: Run 8A-50-2	CEM OPERATOR: John Maxwell
CITY, STATE: Martin Station	RUN START TIME: 21:45	ENTERED BY: John Maxwell
LOCATION: 8A Gas Turbine	RUN END TIME: 22:09	CHECKED BY:
START DATE: 5/8/01	MAXIMUM RESPONSE TIME SEC. 60	
END DATE: 5/8/01		

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		%, dry	%, dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	-0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.09	8.07	10.01		
	ZERO	0.03	0.01	0.06		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	0.4%	0.7%	0.0%		
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.1%	0.1%	0.5%		
FINAL BIAS CHECK, Cbf	UPSCALE	12.05	8.08	10.09		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.01	0.05		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.2%	0.8%	0.4%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.1%	0.5%		
DRIFT CHECK, D	UPSCALE	-0.2%	0.1%	0.4%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.0%	-0.1%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.03	0.01	0.06		
Co = (Cbi.zero + Cbf.zero)/2						
AVERAGE % BIAS	UPSCALE	0.3%	0.8%	0.2%		
	ZERO	0.1%	0.1%	0.5%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		12.07	8.08	10.05		
Cm = (Cbi.upscale + Cbf.upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.97	4.06	7.17		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.89	4.02	7.12		
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.38	5.99		

PLANT: Florida Power and Light RUN NUMBER Run 8A-50-1 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 20:45 ENTERED BY: John Maxwell
 LOCATION: 8A Gas Turbine RUN END TIME: 21:09 CHECKED BY:
 START DATE: 5/8/01
 END DATE: 5/8/01 MAXIMUM RESPONSE TIME SEC. 60

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.00	8.00	17.99		
	MID	21.12	5.07	10.00		
	LO			5.99		
	ZERO	0.00	0.00	-0.04		
RESPONSE TIME (SECONDS)		32	31	58		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	-0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	36.5%	0.7%	0.0%		
	LO	N/A	N/A	0.0%		
	ZERO	N/A	N/A	-0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.00	8.01	10.04		
	ZERO	0.01	0.00	0.00		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	0.0%	0.1%	0.2%		
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.0%	0.0%	0.2%		
FINAL BIAS CHECK, Cbf	UPSCALE	12.09	8.07	10.01		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.03	0.01	0.06		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.4%	0.7%	0.0%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.1%	0.5%		
DRIFT CHECK, D	UPSCALE	0.4%	0.6%	-0.1%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.1%	0.1%	0.3%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.02	0.01	0.03		
Co = (Cbi,zero + Cbf,zero)/2						
AVERAGE % BIAS	UPSCALE	0.2%	0.4%	0.1%		
	ZERO	0.1%	0.1%	0.4%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		12.05	8.04	10.03		
Cm = (Cbi,upscale + Cbf,upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.96	4.06	7.12		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.91	4.04	7.09		
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.41	5.99		

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GE-EER

CALIBRATION ERROR, BIAS, DRIFT AND O2-CORRECTED CONCENTRATIONS

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8A Gas Turbine START DATE: 5/8/01 END DATE: 5/8/01		RUN NUMBER: Run 8A-50-3 RUN START TIME: 22:40 RUN END TIME: 23:04	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:		
		MAXIMUM RESPONSE TIME SEC. 60			
SPECIES		O2	CO2	NOx	
LOCATION		Stack	Stack	Stack	
CONCENTRATION UNIT		% dry	% dry	ppmvd	
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	
SPAN		25	10	20	
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00	
	MID	12.00	5.00	10.00	
	LO			6.00	
	ZERO	0.0	0.0	0.00	
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.00	8.00	17.99	
	MID	21.12	5.07	10.00	
	LO			5.99	
	ZERO	0.00	0.00	-0.04	
RESPONSE TIME (SECONDS)		32	31	58	
INITIAL ANALYZER CALIBRATION ERROR, E _i	HIGH	0.0%	0.0%	-0.1%	
E _i = ((C _{ma} - C _{ai})/Span)x100%	MID	36.5%	0.7%	0.0%	
	LO	N/A	N/A	0.0%	
	ZERO	N/A	N/A	-0.2%	
INITIAL BIAS CHECK, C _{bi}	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.05	8.08	10.09	
	ZERO	0.02	0.01	0.05	
INITIAL SYSTEM CALIBRATION BIAS, B _i	UPSCALE	0.2%	0.8%	0.4%	
B _i = ((C _{bi} - C _{ai})/Span)x100%	ZERO	0.1%	0.1%	0.5%	
FINAL BIAS CHECK, C _{bf}	UPSCALE	12.05	8.07	10.11	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.03	0.01	0.07	
FINAL SYSTEM CALIBRATION BIAS, B _f	UPSCALE	0.2%	0.7%	0.5%	
B _f = ((C _{bf} - C _{ai})/Span)x100%	ZERO	0.1%	0.1%	0.6%	
DRIFT CHECK, D	UPSCALE	0.0%	-0.1%	0.1%	
D = ((C _{bf} - C _{bi})/Span)x100%	ZERO	0.0%	0.0%	0.1%	
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o		0.03	0.01	0.06	
C _o = (C _{bi,zero} + C _{bf,zero})/2					
AVERAGE % BIAS	UPSCALE	0.2%	0.8%	0.5%	
	ZERO	0.1%	0.1%	0.5%	
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m		12.05	8.08	10.10	
C _m = (C _{bi,upscale} + C _{bf,upscale})/2					
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		13.96	4.07	7.29	

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.91	4.03	7.20		
15% O2 CORRECTION, C15% = C _{gas} * 5.9 / (20.9 - % O2)		3.40	6.07		

Energy & Environmental Research

Run 8A-50-1

1 minute averaged data

For 5-08-2001 @ 20:45:02.57

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.95	4.06	7.07	00:20:45:02.000
13.95	4.06	7.09	00:20:46:02.000
13.95	4.06	7.1	00:20:47:02.000
13.96	4.06	7.1	00:20:48:02.000
13.96	4.06	7.09	00:20:49:02.000
13.96	4.06	7.16	00:20:50:02.000
13.96	4.06	7.13	00:20:51:02.000
13.96	4.07	7.12	00:20:52:02.000
13.96	4.06	7.14	00:20:53:02.000
13.96	4.07	7.17	00:20:54:02.000
13.96	4.07	7.17	00:20:55:02.000
13.96	4.06	7.12	00:20:56:02.000
13.97	4.06	7.13	00:20:57:02.000
13.97	4.07	7.16	00:20:58:02.000
13.97	4.07	7.13	00:20:59:02.000
13.97	4.06	7.08	00:21:00:02.000
13.98	4.06	7.08	00:21:01:02.000
13.98	4.06	7.12	00:21:02:02.000
13.97	4.07	7.1	00:21:03:02.000
13.97	4.07	7.13	00:21:04:02.000
13.97	4.07	7.1	00:21:05:02.000
13.97	4.07	7.19	00:21:06:02.000
13.96	4.07	7.15	00:21:07:02.000
13.96	4.07	7.12	00:21:08:02.000
13.96	4.07	7.1	00:21:09:02.000
13.96	4.06	7.12	Average

0.04	0.02	10.1 00:21:26:57.000
0.04	0.02	10.1 Nox
0.04	0.02	10.11 00:21:27:27.000
0.03	0.02	10.11 00:21:27:42.000
-0.01	0.02	10.1 00:21:27:57.000
0.47	0.02	9.49 00:21:28:12.000
2.05	0.74	5.3 00:21:28:27.000
3.84	1.55	1.71 00:21:28:42.000
6.65	1.68	0.82 00:21:28:57.000
8.84	1.69	0.59 00:21:29:12.000
10.1	1.67	0.44 00:21:29:27.000
10.92	1.63	0.22 00:21:29:42.000
11.42	1.6	0.17 00:21:29:57.000
11.78	1.57	0.42 00:21:30:12.000
12.12	1.54	0.36 00:21:30:27.000
12.45	1.51	0.19 00:21:30:42.000
13.02	1.48	0.09 00:21:30:57.000
13.14	1.46	0.06 00:21:31:12.000
13.57	1.44	0.06 00:21:31:27.000
13.99	1.41	0.04 00:21:31:42.000
14.14	1.4	0.03 00:21:31:57.000
13.71	1.39	0.04 00:21:32:12.000
12.57	1.39	0.04 00:21:32:27.000
10.83	1.39	0.03 00:21:32:42.000
8.78	1.39	0.04 00:21:32:57.000
6.86	1.38	0.03 00:21:33:12.000
5.29	1.36	0.04 00:21:33:27.000
3.73	1.33	0.04 00:21:33:42.000
1.83	1.23	0.04 00:21:33:57.000
0.95	1.11	0.08 00:21:34:12.000
0.92	0.51	0.53 00:21:34:27.000
1.15	0.11	0.67 00:21:34:42.000
1.64	0.08	0.26 00:21:34:57.000
1.97	0.08	0.09 00:21:35:12.000
2.11	0.08	0.06 00:21:35:27.000
1.83	0.07	0.05 CO
1.64	0.07	0.04 00:21:35:57.000
1.61	0.06	0.04 00:21:36:12.000
1.61	0.06	0.04 00:21:36:27.000
1.68	0.06	0.04 00:21:36:42.000
2.21	0.1	0.04 00:21:36:57.000
3.08	0.08	0.04 00:21:37:12.000
3.88	0.07	0.04 00:21:37:27.000
4.54	0.06	0.04 00:21:37:42.000
5.17	0.06	0.04 THC
5.59	0.05	0.03 00:21:38:12.000
6.01	0.06	0.03 00:21:38:27.000
6.26	0.05	0.04 00:21:38:42.000
6.47	0.05	0.05 00:21:38:57.000

GE-Energy & Environmental Research

Post 8A-50-1 Pre 8A-50-2

15 sec Averaged data

For 5-08-2001 @ 21:16:12.34

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.05	0	0.08	00:21:16:12.000
0.04	0	0.07	00:21:16:27.000
0.03	0.01	0.07	00:21:16:42.000
0.03	0.01	0.08	00:21:16:57.000
0.04	0.01	0.07	00:21:17:12.000
0.04	0.01	0.05	00:21:17:27.000
0.03	0.01	0.06	00:21:17:42.000
0.03	0.01	0.06	00:21:17:57.000
0.03	0.01	0.06	Zero
0.03	0.01	0.06	00:21:18:27.000
0.04	0.01	0.06	00:21:18:42.000
0.05	0.01	0.06	00:21:18:57.000
0.04	0.01	0.06	00:21:19:12.000
0.04	0.01	0.06	00:21:19:27.000
0.03	0.01	0.04	00:21:19:42.000
0.91	0.06	0.04	00:21:19:57.000
10.7	0.03	0.06	00:21:20:12.000
12.05	0.01	0.31	00:21:20:27.000
12.1	0.01	0.37	00:21:20:42.000
12.1	0.01	0.09	00:21:20:57.000
12.09	0.01	0.03	00:21:21:12.000
12.09	0.01	0.03	00:21:21:27.000
12.09	0.01	0.04	00:21:21:42.000
12.09	0.01	0.04	O2
12.08	0.01	0.04	00:21:22:12.000
12.05	0.01	0.04	00:21:22:27.000
11.51	0.7	0.03	00:21:22:42.000
1.73	7.5	0.03	00:21:22:57.000
0.07	8.04	0.04	00:21:23:12.000
0.05	8.07	0.03	CO2
0.03	8.09	0.04	00:21:23:42.000
0.03	8.09	0.04	00:21:23:57.000
0.02	8.1	0.04	00:21:24:12.000
0.01	8.08	0.04	00:21:24:27.000
0.02	8.1	0.04	00:21:24:42.000
0.07	3.17	0.05	00:21:24:57.000
0.05	0.15	0.45	00:21:25:12.000
0.04	0.07	5.09	00:21:25:27.000
0.04	0.05	9.31	00:21:25:42.000
0.03	0.04	9.86	00:21:25:57.000
0.03	0.03	10.04	00:21:26:12.000
0.04	0.03	10.07	00:21:26:27.000
0.04	0.02	10.08	00:21:26:42.000

Energy & Environmental Research

Run 8A-50-2

1 minute averaged data

For 5-08-2001 @ 21:45:05.90

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.99	4.04	7	00:21:45:05.000
13.98	4.04	7.03	00:21:46:05.000
13.98	4.05	7.07	00:21:47:05.000
13.98	4.05	7.11	00:21:48:05.000
13.97	4.06	7.16	00:21:49:05.000
13.97	4.06	7.16	00:21:50:05.000
13.96	4.06	7.2	00:21:51:05.000
13.96	4.06	7.22	00:21:52:05.000
13.96	4.06	7.18	00:21:53:05.000
13.96	4.06	7.17	00:21:54:05.000
13.97	4.06	7.2	00:21:55:05.000
13.97	4.06	7.17	00:21:56:05.000
13.97	4.05	7.13	00:21:57:05.000
13.97	4.05	7.18	00:21:58:05.000
13.97	4.05	7.18	00:21:59:05.000
13.97	4.05	7.18	00:22:00:05.000
13.97	4.06	7.16	00:22:01:05.000
13.97	4.06	7.2	00:22:02:05.000
13.97	4.05	7.21	00:22:03:05.000
13.97	4.06	7.18	00:22:04:05.000
13.97	4.06	7.2	00:22:05:05.000
13.97	4.06	7.21	00:22:06:05.000
13.97	4.06	7.24	00:22:07:05.000
13.97	4.06	7.23	00:22:08:05.000
13.97	4.06	7.24	00:22:09:05.000
13.97	4.06	7.17	Average

GE-Energy & Environmental Research

Post 8A-50-2 Pre 8A-50-3

15 sec Averaged data

For 5-08-2001 @ 22:13:36.11

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.05	0.01	0.18	00:22:13:36.000
0.02	0.01	0.18	00:22:13:51.000
0.03	0.01	0.16	00:22:14:06.000
0.03	0.01	0.15	00:22:14:21.000
0.03	0.01	0.16	00:22:14:36.000
0.03	0.01	0.14	00:22:14:51.000
0.02	0.01	0.14	00:22:15:06.000
0.02	0.01	0.13	Zero
0.03	0.01	0.11	00:22:15:36.000
0.03	0.01	0.11	00:22:15:51.000
0.02	0.01	0.12	00:22:16:06.000
0.02	0.01	0.11	00:22:16:21.000
0.02	0.01	0.09	00:22:16:36.000
0.03	0.01	0.09	00:22:16:51.000
7.4	0.08	0.09	00:22:17:06.000
11.9	0.01	0.28	00:22:17:21.000
12.01	0.01	0.44	00:22:17:36.000
12.03	0.01	0.16	00:22:17:51.000
12.04	0.01	0.08	00:22:18:06.000
12.04	0.01	0.07	00:22:18:21.000
12.05	0.01	0.05	00:22:18:36.000
12.04	0.01	0.05	00:22:18:51.000
12.05	0.01	0.06	O2
12.05	0.01	0.05	00:22:19:21.000
12.05	0.01	0.06	00:22:19:36.000
12.05	0.01	0.05	Nox Zero
6.15	4.75	0.05	00:22:20:06.000
0.22	7.95	0.06	00:22:20:21.000
0.05	8.03	0.05	00:22:20:36.000
0.03	8.05	0.05	00:22:20:51.000
0.02	8.06	0.05	00:22:21:06.000
0.01	8.07	0.05	00:22:21:21.000
0.01	8.08	0.05	00:22:21:36.000
0.01	8.08	0.05	CO2
0	8.07	0.05	00:22:22:06.000
0.01	8.08	0.05	00:22:22:21.000
0.04	3.36	0.05	00:22:22:36.000
0.03	0.2	0.6	00:22:22:51.000
0.03	0.09	5.31	00:22:23:06.000
0.03	0.06	9.31	00:22:23:21.000
0.03	0.05	9.83	00:22:23:36.000
0.02	0.04	10.03	00:22:23:51.000
0.03	0.04	10.05	00:22:24:06.000

0.02	0.03	10.07 00:22:24:21.000
0.02	0.03	10.09 00:22:24:36.000
0.03	0.03	10.09 Nox
0.02	0.03	10.09 00:22:25:06.000
0.01	0.03	10.1 00:22:25:21.000
0.01	0.02	10.1 00:22:25:36.000
-0.01	0.03	10.06 00:22:25:51.000
-0.01	0.04	10.05 00:22:26:06.000
0.98	0.08	7.47 00:22:26:21.000
4.79	1.64	4.54 00:22:26:36.000
7.07	1.95	2.52 00:22:26:51.000
8.6	1.9	1.63 00:22:27:06.000
9.12	1.83	1.38 00:22:27:21.000
9.11	1.81	1.25 00:22:27:36.000
9.07	1.81	0.77 00:22:27:51.000
9.07	1.81	0.45 00:22:28:06.000
9	1.81	0.2 00:22:28:21.000
8.13	1.81	0.11 00:22:28:36.000
7.18	1.83	0.07 00:22:28:51.000
6.55	1.85	0.06 00:22:29:06.000
6.15	1.86	0.04 00:22:29:21.000
5.87	1.87	0.03 00:22:29:36.000
5.68	1.88	0.03 00:22:29:51.000
5.52	1.89	0.03 00:22:30:06.000
5.39	1.91	0.03 00:22:30:21.000
5.29	1.92	0.03 00:22:30:36.000
5.19	1.92	0.03 00:22:30:51.000
5.11	1.93	0.03 00:22:31:06.000
5.03	1.93	0.04 00:22:31:21.000
5.06	1.92	0.04 CO
5.71	1.84	0.1 00:22:31:51.000
2.8	1.58	0.41 00:22:32:06.000
1.32	1.13	0.78 00:22:32:21.000
1.22	0.41	1.07 00:22:32:36.000
1.22	0.11	1.29 00:22:32:51.000
1.68	0.08	0.87 00:22:33:06.000
2.05	0.07	0.33 00:22:33:21.000
2.25	0.08	0.21 00:22:33:36.000
2.55	0.09	0.16 00:22:33:51.000
2.76	0.09	0.16 00:22:34:06.000
3.01	0.09	0.15 00:22:34:21.000
3.32	0.13	0.14 00:22:34:36.000
4.03	0.09	0.14 00:22:34:51.000
4.67	0.07	0.14 THC
5.4	0.06	0.14 00:22:35:21.000
6.05	0.06	0.14 00:22:35:36.000
6.63	0.06	0.12 00:22:35:51.000
7.09	0.06	0.12 00:22:36:06.000
7.45	0.06	0.12 00:22:36:21.000

Energy & Environmental Research

Run 8A-50-3

1 minute averaged data

For 5-08-2001 @ 22:40:25.21

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
13.96	4.05	7.08	00:22:40:25.000
13.97	4.06	7.11	00:22:41:25.000
13.97	4.06	7.18	00:22:42:25.000
13.97	4.06	7.24	00:22:43:25.000
13.97	4.06	7.22	00:22:44:25.000
13.97	4.06	7.22	00:22:45:25.000
13.96	4.06	7.25	00:22:46:25.000
13.96	4.07	7.3	00:22:47:25.000
13.96	4.07	7.32	00:22:48:25.000
13.96	4.07	7.32	00:22:49:25.000
13.97	4.07	7.32	00:22:50:25.000
13.97	4.07	7.29	00:22:51:25.008
13.96	4.07	7.34	00:22:52:25.008
13.96	4.07	7.36	00:22:53:25.008
13.96	4.07	7.35	00:22:54:25.008
13.95	4.08	7.32	00:22:55:25.008
13.96	4.08	7.35	00:22:56:25.008
13.96	4.08	7.4	00:22:57:25.008
13.96	4.08	7.34	00:22:58:25.008
13.96	4.08	7.33	00:22:59:25.008
13.96	4.07	7.31	00:23:00:25.008
13.96	4.08	7.32	00:23:01:25.008
13.96	4.07	7.35	00:23:02:25.008
13.96	4.07	7.25	00:23:03:25.008
13.96	4.07	7.32	00:23:04:25.008
13.96	4.07	7.29	Average

BEST AVAILABLE COPY

GE-Energy & Environmental Research

Post Bias 8A-50-3

15 sec Averaged data

For 5-08-2001 @ 23:07:30.18

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
5.04	0.94	6.17	00:23:07:30.008
1.44	0.29	6.89	00:23:07:45.008
0.12	0.06	4.43	00:23:08:00.008
0.08	0.04	0.9	00:23:08:15.008
0.06	0.03	0.42	00:23:08:30.008
0.05	0.02	0.33	00:23:08:45.008
0.06	0.02	0.31	00:23:09:00.008
0.03	0.01	0.28	00:23:09:15.008
0.03	0.01	0.23	Zero
0.02	0.01	0.2	00:23:09:45.008
0.03	0.01	0.2	00:23:10:00.008
0.02	0.01	0.18	00:23:10:15.008
0.03	0.01	0.18	00:23:10:30.008
6.31	0.08	0.22	00:23:10:45.008
11.86	0.01	0.51	00:23:11:00.008
12.02	0.01	0.61	00:23:11:15.008
12.04	0.01	0.24	00:23:11:30.008
12.05	0.01	0.14	O2
12.05	0.01	0.11	00:23:12:00.008
12.05	0.01	0.12	00:23:12:15.008
12.05	0.01	0.12	00:23:12:30.008
12.05	0.01	0.1	00:23:12:45.008
12.05	0.01	0.1	00:23:13:00.008
10.57	1.5	0.1	00:23:13:15.008
1.11	7.67	0.1	00:23:13:30.008
0.07	8.01	0.09	00:23:13:45.008
0.03	8.04	0.09	00:23:14:00.008
0.02	8.06	0.09	CO Zero
0.02	8.07	0.08	CO2
0.01	8.07	0.07	00:23:14:45.008
0.01	8.06	0.07	Nox Zero
0.01	8.08	0.07	00:23:15:15.008
0.03	5.04	0.07	00:23:15:30.008
0.03	0.32	0.22	00:23:15:45.008
0.03	0.1	4.36	00:23:16:00.008
0.03	0.07	8.76	00:23:16:15.008
0.03	0.05	9.77	00:23:16:30.008
0.03	0.04	10.01	00:23:16:45.008
0.02	0.04	10.06	00:23:17:00.008
0.03	0.03	10.09	00:23:17:15.008
0.02	0.03	10.09	00:23:17:30.008
0.02	0.03	10.11	Nox
0.02	0.02	10.11	00:23:18:00.008

0	0.03	10.11 00:23:18:15.008
0.01	0.03	10.1 00:23:18:30.008
0	0.04	10.08 00:23:18:45.008
0	0.05	10.08 00:23:19:00.008
0	0.05	8.16 00:23:19:15.008
0	0.07	3.23 00:23:19:30.008
0.01	0.1	1.21 00:23:19:45.008
0.01	0.12	0.46 THC Zero
0.02	0.12	0.39 00:23:20:15.008
0.11	0.08	0.19 00:23:20:30.008
0.28	0.06	0.1 00:23:20:45.008
0.17	0.06	0.05 00:23:21:00.008
0.07	0.05	0.05 00:23:21:15.008
0.03	0.05	0.05 00:23:21:30.008
0.01	0.05	0.04 00:23:21:45.008
0.01	0.05	0.03 00:23:22:00.008
0	0.05	0.03 00:23:22:15.008
0	0.05	0.04 00:23:22:30.008
0.01	0.05	0.04 00:23:22:45.008
0.01	0.05	0.03 00:23:23:00.008
0.01	0.05	0.03 00:23:23:15.008
0.03	0.05	0.03 00:23:23:30.008
0.28	0.13	0.04 00:23:23:45.008
0.9	0.38	0.06 00:23:24:00.008
1.38	0.1	0.09 00:23:24:15.008
1.72	0.07	0.12 00:23:24:30.008
2.57	0.06	0.14 00:23:24:45.008
2.99	0.05	0.15 00:23:25:00.008
3.53	0.05	0.18 00:23:25:15.008
3.69	0.05	0.25 THC
3.35	0.05	0.23 00:23:25:45.008
3.17	0.05	0.13 00:23:26:00.008
3.07	0.05	0.03 CO
3.01	0.05	0.01 00:23:26:30.008

Appendix B

Unit 8A
MOISTURE DATA SHEETS

8A-M4-B5-1

GE EER

Field Data - Method 4 Moisture Run No. _____ Load 8

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / 1 (inch) O2 _____
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO2 _____
 City Indiantown, FL Meter Calibration (Y) 1.0075 Static Pressure NA (in. H₂O) Measure
 Location Stack to Unit # 8A Meter delta H @ 1.7963 Barometric Pressure 30.05 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 10 (in. Hg)
 Operator DR Probe Length 6 FT. TC No. _____ Post Test Leak Rate 0.000 cfm @ 5 (in. Hg)
 Assumed Gas Moisture 0 % Probe Liner Material INCAVEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	1420	1112		1.80	558.838	77	67	
2	3	1423	1113		2.00	568.92	79	60	
3	6	1426	1113		2.00	563.10	78	52	
4	9	1429	1113		2.00	565.48	78	51	
5	12	1432	1114		2.00	567.80	79	52	
6	15	1435	1114		2.00	570.13	79	55	
7	18	1438	1113		2.00	572.26	79	56	
8	21	1441	1113		2.00	574.63	79	56	
	24/000	1444				576.978			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64	max.

B-1

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	fast (silica gel)	totals
Final	791.9	686.3	585.8	930.6	DS
Initial	699.8	748.0	579.6	921.8	bw
net	92.1	-61.7	6.2	8.8	mo 45.4

GE EER

Field Data - Method 4 Moisture Run No. BA-M4-85-2 Load 8

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O₂ NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO₂ NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) NA
 Location Stack to Unit # 8A Barometric Pressure 30.05 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 12 (in. Hg)
 Operator DR Probe Length 6' TC No. NA Post Test Leak Rate NA cfm @ NA (in. Hg)
 Assumed Gas Moisture 8 % Probe Liner Material INCANEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	1525	1113		2.50	577.046	77	65	
2	3	1528	1113		2.50	579.58	77	56	
3	6	1531	1112		2.50	582.13	78	52	
4	9	1534	1112		2.50	584.72	78	51	
5	12	1537	1113		2.50	587.30	79	55	
6	15	1540	1113		2.50	589.82	80	56	
7	18	1543	1113		2.50	592.44	79	56	
8	21	1546	1113		2.50	594.91	79	58	
	24/07	1549				597.553			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.

B-2

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	822.7	687.4	585.8	931.3	
Initial	791.9	686.3	585.8	930.6	
net	30.8	1.1	0	0.7	32.6

GE EER

Field Data - Method 4 Moisture Run No.

8A-M4-85-3 Load 8

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # 8A Barometric Pressure 30.09 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 10 (in. Hg)
 Operator DR Probe Length 6' TC No. NA Post Test Leak Rate 0.000 cfm @ 05 (in. Hg)
 Assumed Gas Moisture NA % Probe Liner Material INCANEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
C-1	0/0	1625	1113		2.50	597.600	76	66		
2	3	1628	1113			600.05	77	60		
3	6	1631	1113			602.64	77	56		
4	9	1634	1113			605.26	78	51		
5	12	1637	1113			607.81	78	53		
6	15	1640	1113			610.40	78	52		
7	18	1643	1113			612.97	79	53		
8	21	1646	1113			615.33	79	55		
	24/OFF	1649				618.060				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64	max.	min.

B-3

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	857.6	687.6	588.2	939.8	DSC
Initial	822.7	687.4	585.8	931.3	bws
net	34.9	0.2	2.4	8.5	46.0

(0.0)

GE EER

Field Data - Method 4 Moisture Run No. 8A-M4-65-1 Load 6

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Moisture NA
 Location Stack to Unit # 8A Barometric Pressure 30.09 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 12 (in. Hg)
 Operator DR Probe Length B^T TC No. NA Post Test Leak Rate 0.000 cfm @ 08 (in. Hg)
 Assumed Gas Moisture NA % Probe Liner Material INCAVEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	1730	1149		2.50	618.100	75	65	
2	3	1733	1149			620.58	76	58	
3	6	1736	1151			623.20	76	56	
4	9	1739	1151			625.73	77	55	
5	12	1742	1151			628.26	77	52	
6	15	1745	1151			630.85	77	51	
7	18	1748	1151			633.44	78	56	
8	21	1751	1150			635.87	78	57	
	24/OFF	1754				638.442			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.

B-4

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	892.3	691.5	586.3	939.8	
Initial	857.6	687.6	588.2	939.8	
net	34.7	3.9	-1.9	0	36.7

GE EER

Field Data - Method 4 Moisture Run No. BA-M4-65-2 Load 6

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Accuracy NA
 Location Stack to Unit # BA Meter delta H @ 1.7963 Barometric Pressure 30.05 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 8 (in. Hg)
 Operator DR Probe Length 8' TC No. Post Test Leak Rate 0.000 cfm @ 10 (in. Hg)
 Assumed Gas Moisture NA % Probe Liner Material INLANEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	00	1840	1151		2.50	638.526	73	65	
2	3	1843	1154			641.03	74	58	
3	6	1846	1153			643.65	75	50	
4	9	1849	1153			646.08	75	49	
5	12	1852	1154			648.64	76	46	
6	15	1855	1154			651.26	76	45	
7	18	1858	1154			653.77	76	48	
8	21	1901	1153			656.43	76	50	
	24/0FF	1904				658.952			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64	max.

B-5

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	929.8	692.1	589.3	946.1	
Initial	892.3	691.5	586.3	939.8	
net	37.5	0.6	3.0	6.3	47.4

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GE EER

Field Data - Method 4 Moisture Run No. BA-M4-65-3 Load 6

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H2O) Measu NA
 Location Stack to Unit # BA Meter delta H @ 1.7963 Barometric Pressure 30.09 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.000 cfm @ 10 (in. Hg)
 Operator DR Probe Length 8' TC No. NA Post Test Leak Rate NA cfm @ NA (in. Hg)
 Assumed Gas Moisture NA % Probe Liner Material INCEL Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	1940	1153		2.50	659.047	72	66	
2	3	1943	1153			661.48	73	60	
3	6	1946	1153			664.13	73	52	
4	9	1949	1153			666.66	74	50	
5	12	1952	1153			669.23	74	47	
6	15	1955	1153			671.63	74	46	
7	18	1958	1153			674.27	75	46	
8	21	2001	1153			676.80	75	50	
24/OFF		2004				679.305			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 60	max.

B-6

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	746.3	693.8	592.5	953.2	
Initial	709.6	692.1	589.3	946.1	
net	37.3	1.7	3.2	7.1	49.3

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GE EER

Field Data - Method 4 Moisture Run No. 8A-M4-50-1 Load 5

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / 1 (inch) O2
 Plant FP&L Meter Calibration (Y) 1.0072 Filter Number NA CO2
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Measure
 Location Stack to Unit # 8A Pitot Tube No. NA Cp NA Barometric Pressure 30.05 (in Hg)
 Run Date 05-08-01 Probe Length 8' TC No. Pretest Leak Rate 0.000 cfm @ 10 (in. Hg)
 Operator DR Assumed Gas Moisture % Probe Liner Material INCANEL Post Test Leak Rate cfm @ (in. Hg)
 Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	2045	1188		2.50	679.305	73	66	
2	3	2048	1189			681.81	73	60	
3	6	2051	1188			684.37	74	54	
4	9	2054	1188			686.87	75	52	
5	12	2057	1189			689.52	76	51	
6	15	2100	1189			692.13	76	51	
7	18	2103	1191			694.67	77	54	
8	21	2106	1189		↓	697.14	76	55	
	24/0FF	2109				699.843			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.

B-7

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
	Final	778.7	694.0	592.5	
Initial	246.3	693.8	592.5	895.1	bw
net	32.4	0.2	0	2.6	mc
				4.6	(0.
					35.2
					37.2

GE EER

Field Data - Method 4 Moisture Run No. 8A-M4-50-2 Load 5

Project ID	GE PPSD Martin Station	Meter Box Number	NCA-1	Noz. ID/Dia.	NA / (inch)	O2	
Plant	FP&L	Meter Calibration (Y)	1.0079	Filter Number	NA	CO2	
City	Indiantown, FL	Meter delta H @	1.7963	Static Pressure	NA (in. H2O)	Moisture	
Location	Stack to Unit # 8A	Pitot Tube No.	NA	Cp	NA	Barometric Pressure	30.09 (in Hg)
Run Date	05-08-01	Probe Length	8'	TC No.		Pretest Leak Rate	0.000 cfm @ 06 (in. Hg)
Operator	DR	Assumed Gas Moisture		% Probe Liner Material	INCANEL	Post Test Leak Rate	0.000 cfm @ 10 (in. Hg)
				Pitot Check: Pretest	NA	Post Test	NA

B-8

Port & Traverse Point No	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H2O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven
C-1	0/0	2145	1191		2.50	699.880	74	68	
2	3	2148	1191			702.63	74	61	
3	6	2151	1188			704.94	75	56	
4	9	2154	1189			707.48	75	51	
5	12	2157	1189			710.02	76	52	
6	15	2200	1189			712.47	77	52	
7	18	2203	1190			715.26	77	52	
8	21	2206	1190			717.78	78	56	
	24/OFF	2209				720.225			
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	815.5	698.0	594.5	906.0	
Initial	778.7	694.0	592.5	899.7	
net	36.8	4.0	2.0	6.3	49.1

GE EER

Field Data - Method 4 Moisture Run No. 8A-M4-50-3 Load 50

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / 1 (inch) O2
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO2
 City Indiantown, FL Meter Calibration (Y) 1.0079 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # Meter delta H @ 1.7963 Barometric Pressure 30.05 (in Hg)
 Run Date 05-08-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 0.002 cfm @ 07 (in. Hg)
 Operator DR Probe Length 8' TC No. Post Test Leak Rate 0.000 cfm @ 07 (in. Hg)
 Assumed Gas Moisture % Probe Liner Material INCAVEL Pitot Check: Pretest NA Post Test NA

B-9

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
C-1	0/6	2240	1190		2.50	720.297	74	65		
2	3	2243	1190			722.78	76	60		
3	6	2246	1190			725.44	77	53		
4	9	2249	1190			727.96	78	51		
5	12	2252	1190			730.54	78	50		
6	15	2255	1191			733.12	79	53		
7	18	2258	1190			735.72	79	55		
8	21	2301	1190		↓	738.36	80	56		
	24/OFF	2304				740.85				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.	min.

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
	Final	843.0	698.1	594.7	
Initial	815.5	698.0	594.5	906.0	
net	27.5	0.1	0.2	0	27.8

Appendix C

Unit 8A
PARTICULATE DATA

Florida Power & Light
 Indiantown, FL

PARTICULATE TEST SUMMARY

Unit 8A Stack

Run Number	1	2	3	Average
Test Date	5/7/01	5/7/01	5/8/01	
Run Time	1445-1756	1926-2233	0910-1222	
<u>Test Train Parameters:</u>				
Volume Gas Sampled, dscf ¹	110.449	112.109	139.615	
Percent Isokinetic, %	103.0	97.1	98.3	
<u>Flue Gas Parameters:</u>				
Temperature, Degrees F	1104	1095	1098	1099
Moisture, %	8.0	7.0	6.2	7.1
Volumetric Flow Rates calculated Standard, dscfm	739,830	747,400	745,360	744,200
<u>Particulate Results:</u>				
Milligrams collected	3.80	3.00	3.00	3.27
Concentration, mg/dscf ¹	0.0344	0.0268	0.0215	0.03
calc Emission Rate, lb/hr	3.37	2.65	2.12	2.71

¹ dry standard conditions, 68F, 29.92 in. Hg

**Florida Power & Light
Indiantown, FL**

Particulate Results

Unit 8A Stack

TEST DATA:

	1	2	3
Run number			
Date	5/7/01	5/7/01	5/8/01
Time period	1445-1756	1200-1304	0910-1222
Operator	DR	DR	DR

SAMPLING DATA:

	1	2	3
Sampling duration, min.	180	180	180
Nozzle diameter, in.	0.248	0.248	0.248
Barometric pressure, in. Hg	30.05	30.05	30.05
Avg. orifice press. diff., in H ₂ O	1.30	1.35	2.14
Avg. dry gas meter temp., F	82.04	77.79	84.35
Volume H ₂ O impingers (ml)	180.2	155.5	168.2
Weight change silica gel (g)	23.9	24.9	27.7
Std. vol. of H ₂ O vapor coll., cu.ft.	9.61	8.49	9.22
Dry gas meter calibration factor	1.0079	1.0079	1.0079
Sample vol. at meter cond., dcf	111.701	112.476	141.509
Sample vol. at std. cond., dscf (1)	110.449	112.109	139.615
Percent of isokinetic sampling	103.0	97.1	98.3

GAS STREAM COMPOSITION DATA:

	1	2	3
CO ₂ , % by volume, dry basis	4.2	4.2	4.2
O ₂ , % by volume, dry basis	13.6	13.6	13.6
CO, % by volume dry basis	0.0	0.0	0.0
N ₂ , % by volume, dry basis	82.2	82.2	82.2
Molecular wt. of dry gas, lb/lb mole	29.22	29.22	29.22
H ₂ O vapor in gas stream, prop. by vol.	0.080	0.070	0.062
Mole fraction of dry gas	0.920	0.930	0.938
Molecular wt. of wet gas, lb/lb mole	28.32	28.43	28.52

GAS STREAM VELOCITY

	1	2	3
Sq. rt. delta P	0.9751	1.0383	1.2692
Static pressure, in. H ₂ O	0.00	0.00	0.00
Absolute pressure, in. Hg	30.05	30.05	30.05
Avg. temperature, F	1104	1095	1098
Pitot tube coefficient	0.84	0.84	0.84
Total number of traverse points	24	24	24
Avg. gas stream velocity, ft./sec.	94.9	100.6	122.9

Project ID 7623- Location UNIT 8B STACK
 Plant FP&I A

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat
A-1	90/0	1625	1103	0.80	1.06	245.32	81	67	238	—
	33/4	1628	1104	0.93	1.24	247.38	82	66	253	—
2	7 1/2	1632	1103	0.98	1.30	249.32	81	65	260	—
	11 1/4	1636	1103	1.10	1.46	252.17	83	65	257	—
3	15	1640	1104	0.98	1.30	254.60	83	64	249	—
	18 3/4	1643	1102	0.98	1.30	256.92	83	67	259	—
4	22 1/2	1647	1103	0.82	1.09	259.22	82	68	255	—
	26 1/4	1650	1103	0.82	1.09	261.45	83	68	258	—
5	30	1654	1103	0.62	0.82	263.70	83	68	247	—
	33 3/4	1658	1102	0.65	0.86	265.56	82	61	256	—
6	37 1/2	1702	1102	0.65	0.86	267.56	82	58	257	—
	41 1/4	1705	1102	0.65	0.86	269.55	81	54	251	—
D-1	135/0	1712	1102	0.80	1.06	271.51	81	65	249	—
	33/4	1716	1102	0.80	1.06	275.62	82	56	249	—
2	7 1/2	1719	1102	2.00	2.66	275.71	82	53	248	—
	11 1/4	1723	1102	2.00	2.66	279.16	82	51	247	—
3	15	1726	1102	1.50	2.00	282.48	83	54	250	—
	18 3/4	1730	1103	1.90	2.53	285.30	84	56	247	—
4	22 1/2	1734	1103	1.65	2.19	288.62	83	55	254	—
	26 1/4	1737	1101	0.90	1.20	291.94	82	56	255	—
5	30	1741	1101	0.80	1.06	293.96	82	58	250	—
	33 3/4	1745	1103	0.75	1.00	296.37	82	60	245	—
6	37 1/2	1749	1103	0.75	1.00	298.26	82	60	247	—
	41 1/4	1752	1102	0.72	0.96	300.22	81	61	259	—
	180/OFF	1756				302.448				
Average Values										

C-4

Project ID _____
 Plant MARTIN/FP&L Meter Box Number NCA-1 Noz. ID/Dia. 5995 10.248 (inch) DR
 City INDIANTOWN, FL Meter Calibration (Y) 1.0079 Filter Number RQ1167-03492 C
 Location 88A STACK Meter delta II @ 1.7963 Static Pressure 0 (in. H₂O) RQ1160 Mc
 Run Date 05-07-01 Pitot Tube No. _____ Cp 0.84 Barometric Pressure 30.05 (in. Hg)
 Operator DR Probe Length _____ TC No. _____ Pretest Leak Rate 0.000 cfm @ 10 (in
 Assumed Gas Moisture 8 % Probe Liner Material QUARTZ Post Test Leak Rate 0.908 cfm @ 10 (in
 Pitot Check: Pretest Post Test

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity ΔP	Meter Orifice ΔH		Dry Gas Meter	Impinger Outlet	Filter Over
A-1	0/0	1926	1097	2.00	2.46	303.264	75	63	24
	3 3/4	1929	1096	2.00	2.46	306.72	74	54	25
2	7 1/2	1933	1096	2.00	2.46	309.56	76	51	25
	11 1/4	1937	1096	1.70	2.09	312.44	76	51	25
3	15	1941	1096	1.40	1.72	315.36	76	55	25
	18 3/4	1944	1096	1.40	1.72	318.16	77	58	25
4	22 1/2	1949	1096	1.15	1.42	320.82	78	59	25
	26 1/4	1952	1096	1.15	1.42	323.23	77	60	25
5	30	1956	1096	1.05	1.29	325.67	78	62	25
	33 3/4	1959	1096	1.05	1.29	327.98	78	63	25
6	37 1/2	2003	1096	1.10	1.35	330.36	78	63	25
	41 1/4	2006	1096	1.10	1.35	332.56	78	63	25
B-1	45/0	2012	1096	2.00	2.46	335.17	77	64	25
	3 3/4	2016	1096	1.20	1.48	336.25	79	64	25
2	7 1/2	2020	1096	1.30	1.60	340.77	78	66	25
	11 1/4	2023	1096	1.30	1.60	343.32	78	63	25
3	15	2026	1096	1.20	1.48	346.12	78	63	25
	18 3/4	2029	1096	1.20	1.48	348.46	79	64	25
4	22 1/2	2035	1096	1.10	1.35	350.78	79	58	25
	26 1/4	2038	1096	1.10	1.35	352.12	79	59	25
5	30	2042	1096	0.92	1.13	355.48	80	59	25
	33 3/4	2045	1095	0.82	1.00	357.62	80	58	25
6	37 1/2	2049	1096	0.78	0.96	359.86	80	51	25
	41 1/4	2053	1096	0.78	0.96	361.81	81	48	25
Average Values									max.

C-5

G. EER

Project ID 7623- Location 87A STACK
 Plant FP&I.

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat
E-1	9:00	2101	1096	0.65	0.88	363.97	78	56	245	-
	3 3/4	2105	1096	0.65	0.80	365.78	78	50	251	-
2	7 1/2	2109	1097	0.70	0.86	367.70	80	51	250	-
	1 1/4	2112	1097	0.70	0.86	369.62	79	50	251	-
3	15	2116	1097	0.70	0.86	371.92	79	51	256	-
	18 3/4	2120	1097	0.70	0.86	373.86	79	53	255	-
4	22 1/2	2124	1097	0.65	0.80	375.40	77	52	251	-
	26 1/4	2127	1097	0.65	0.80	377.30	80	54	256	-
5	30	2132	1096	0.70	0.86	379.13	80	56	255	-
	33 3/4	2135	1096	0.70	0.86	381.16	80	55	251	-
6	37 1/2	2138	1096	0.70	0.86	383.00	80	55	256	-
	41 1/4	2143	1096	0.70	0.86	385.12	79	57	250	-
D-1	135/6	2151	1096	0.90	1.11	386.98	77	63	249	-
	3 3/4	2154	1096	0.95	1.17	388.96	77	60	251	-
2	7 1/2	2200	1096	1.20	1.48	391.16	76	55	243	-
	11 1/4	2203	1096	1.20	1.48	393.72	75	55	247	-
3	15	2207	1095	1.30	1.60	396.17	75	54	254	-
	18 3/4	2211	1091	1.30	1.60	398.71	75	56	254	-
4	22 1/2	2215	1091	1.20	1.48	401.37	78	57	250	-
	26 1/4	2218	1091	1.20	1.48	403.86	76	57	249	-
5	30	2222	1091	1.10	1.35	406.42	76	58	251	-
	33 3/4	2226	1091	1.10	1.35	408.67	76	58	257	-
6	37 1/2	2230	1092	1.10	1.35	410.91	78	59	255	-
	41 1/4	2233	1092	1.10	1.35	413.30	78	60	254	-
180/OFF						415.740				
Average Values									max	min/max

9-D

EER

Isokinetic Field Data - Method 5 Run No. 83-A

Project ID 7623 Noz. ID/Dia. 592B/0.248 (inch) 0
 Plant MARTIN/EP&L Meter Box Number NCA-1 Filter Number RQ1175-0.3520 CC
 City INDIANTOWN, FL Meter Calibration (Y) 1.0079 Static Pressure 0 (in. H₂O) Meas
 Location #88 STACK Meter delta H @ 1.7963 Barometric Pressure 30.05 (in. Hg)
 Run Date 05-08-01 Pitot Tube No. _____ Cp 0.84 Pretest Leak Rate 0.000 cfm @ 10 (in.)
 Operator DR Probe Length _____ TC No. Post Test Leak Rate 0.004 cfm @ 10 (in.)
 Assumed Gas Moisture 8 % Probe Lincr Material _____ Pitot Check: Pretest Post Test

Port & Traverse Point No.	Sampling Time (Min)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)		
				Gas Velocity ΔP	Meter Orifice ΔH		Dry Gas Meter	Impinger Outlet	Filter Oven
A-1	0/0	0910	1094	2.00	2.62	415.902	74	68	242
	3 3/4	0913	1096	2.00	2.62	418.67	74	53	250
	7 1/2	0917	1096	2.10	2.75	422.12	75	51	251
	11 1/4	0920	1096	2.10	2.75	425.48	76	52	251
	15	0924	1097	2.10	2.75	428.73	78	56	251
	18 3/4	0928	1097	2.10	2.75	431.16	79	56	250
4	22 1/2	0932	1096	1.60	2.10	435.52	79	59	255
	26 1/4	0935	1096	1.60	2.10	438.46	78	62	251
5	30	0939	1096	1.30	1.70	441.31	79	63	251
	33 3/4	0943	1098	1.30	1.70	443.90	79	57	244
6	37 1/2	0946	1098	1.30	1.70	446.74	80	53	251
	41 1/4	0950	1098	1.30	1.70	449.28	79	51	251
B-1	45/0	0958	1098	2.00	2.62	452.00	78	67	231
	3 3/4	1000	1098	2.00	2.62	455.26	79	51	241
	7 1/2	1003	1099	2.05	2.69	458.58	80	52	251
	11 1/4	1006	1099	2.10	2.75	461.84	80	53	241
	15	1010	1099	2.10	2.75	465.00	80	54	262
	18 3/4	1014	1097	2.10	2.75	468.46	81	56	241
4	22 1/2	1018	1097	1.55	2.03	472.13	79	57	241
	26 1/4	1022	1097	1.55	2.03	474.98	79	53	241
5	30	1025	1098	1.30	1.70	477.80	79	52	251
	33 3/4	1029	1098	1.20	1.57	480.37	80	51	251
6	37 1/2	1033	1098	1.20	1.57	482.86	79	50	251
	41 1/4	1036	1097	1.20	1.57	485.33	79	50	251
Average Values									

C-7

D

Project ID 7623-		Location #87 STACK		Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
Plant FP&L		Stack Temperature (°F)	Gas Velocity P	Meter Orifice H	Dry Gas Meter		Impinger Outlet	Filter Oven	Probe Heat	
Post & Traverse Point No.	Sampling Time (Min.)					Clock Time (24 hr)				
B-1	90/0	1048	1096	1.10	1.44	488.16	78	58	240	-
	33/4	1051	1098	1.10	1.44	490.40	81	52	246	-
2	7 1/2	1056	1098	1.30	1.70	493.16	81	58	252	-
	11 1/4	1059	1098	1.30	1.70	495.75	83	60	256	-
3	15	1103	1098	1.30	1.70	498.31	85	62	255	-
	18 3/4	1107	1097	1.30	1.70	500.86	86	61	250	-
4	22 1/2	1110	1099	1.20	1.57	503.65	88	53	261	-
	26 1/4	1114	1099	1.20	1.57	506.16	89	52	258	-
5	30	1118	1098	1.10	1.44	508.52	89	54	251	-
	33 3/4	1122	1098	1.10	1.44	511.06	91	54	261	-
6	37 1/2	1125	1099	1.10	1.44	513.60	92	55	256	-
	41 1/4	1129	1099	1.00	1.31	516.00	92	56	253	-
C D-1	135/0	1137	1099	2.00	2.62	518.52	90	63	258	-
	33/4	1140	1099	2.00	2.62	521.66	91	60	266	-
2	7 1/2	1144	1098	1.90	2.49	524.88	92	61	260	-
	11 1/4	1148	1100	1.90	2.49	527.82	94	56	256	-
3	15	1152	1100	2.00	2.88	531.26	94	53	256	-
	18 3/4	1155	1099	2.00	2.62	534.52	95	50	250	-
4	22 1/2	1200	1099	1.90	2.49	537.82	95	51	256	-
	26 1/4	1203	1099	1.90	2.49	541.23	96	54	247	-
5	30	1207	1100	1.90	2.49	544.26	95	55	242	-
	33 3/4	1210	1099	1.90	2.49	547.72	96	56	248	-
6	37 1/2	1214	1099	1.90	2.49	550.86	96	53	249	-
	41 1/4	1217	1098	1.90	2.49	554.11	97	54	249	-
	180/0FF	1222				557.411				
Average										

C-8

C

MS MOISTURES

(NO DATA SHEETS - DR 05-08-01)

#1

<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
840.0	719.5	573.1	910.3
<u>698.0</u>	<u>687.5</u>	<u>566.9</u>	<u>886.4</u>
142.0	32.0	6.2	23.9
			"
			<u>204.1 TOTAL</u>

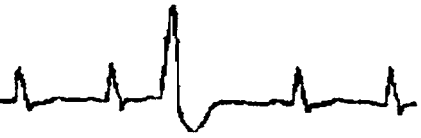
#2

800.7	742.2	581.6	935.2
<u>626.4</u>	<u>719.5</u>	<u>573.1</u>	<u>910.3</u>
124.3	22.7	8.5	24.9
			"
			<u>180.4 TOTAL</u>

#3

825.3	748.0	579.6	921.8
<u>707.0</u>	<u>706.9</u>	<u>570.8</u>	<u>894.1</u>
118.3	41.1	8.8	27.7 =
			<u>TOT 195</u>

RESOLUTION ANALYTICS, INC.
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SANFORD, NC 27330

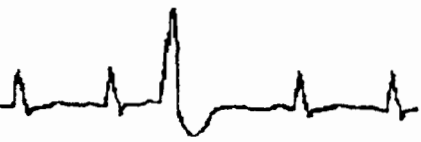
(919) 774-5557

ANALYTICAL REPORT

- FILTERABLE PARTICULATE
(EPA METHOD 5 (40 CFR. PART 60))

CLIENT: EER

RFA#: 7623



RES **REPORT SUMMARY** *RES*

RFA#: **7623**

<i>SAMPLE ID</i>	<i>Filterable Particulate</i>
ACETONE BLANK	0.1 mgs (150mls)
8A-100-M5-1	3.8 mgs
8A-100-M5-2	3.0 mgs
8A-100-M5-3	3.0 mgs

Analytical Narrative

RFA # 7623

Page 1 of 1

Client/Plant Name: EERDate Rec'd in lab: 5/15/2001Analyst: CLTDate of Analysis: 5/22/2001Analysis Method: EPA Method 5 (40 CFR, Part 60)Analyte(s): Filterable Particulate

Sample Matrix & Components:

Dry Filters, Front¹/₂ Acetone Rinses, Acetone Blank

Summary of Sample Prep:

The acetone rinses and pre-tared filters were transferred to pre-tared teflon "baggies" in a low humidity environment. The acetone rinses were evaporated overnight, then desiccated for 24 hours, after which time they were weighed daily every six hours until consecutive weights agreed within ± 0.5 mgs. The filters were oven dried at 105°C for 2 hours and weighed immediately afterwards. All weights were recorded to the nearest 0.1 mg and include filterable particulate catch only. The total catch reported for each run is a sum of the filter and rinse catches. The acetone blank catch has been subtracted out of sample rinse catches in proportion with their respective volumes.

Summary of Instrumentation:

Denver model A-250 analytical balance

Analytical Detection Limit(s): 0.5 mgs

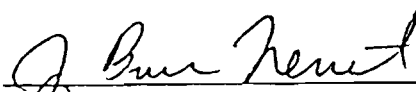
Miscellaneous Comments Regarding Sample Analysis: (Note unusual catch weights, interferences, odd sample behavior, and steps taken to confirm unusual results. Also note any deviations from standard analytical procedures, together with justification and possible affect on results. Specify samples when applicable.)

- 1) Filter fragments were visible in the Front¹/₂ Acetone Rinses and the final catch weight has been adjusted accordingly.

No modifications to EPA Method 5 were made.

Confirmation of Data Review:

QA Officer Signature


(Bruce Nemet, Lab QA Officer)Date 5-22-01

PARTICULATE SAMPLING LABORATORY RESULTS

Plant Name: FP&L	RFA # 7623	
Method: M5	Filename: EER	
Date Received: 5/15/2001	Page 1 of 2	File Pathway: C:\JOBS\1782\JEER.WB1
Run Number	8A-100-M5-1	8A-100-M5-2

Filter Container #	1121	126	69
Date	Date	Date	Date
05/15	05/15	05/15	05/15
Init: CLT	Init: CLT	Init: CLT	Init: CLT
Baggie Tare Wt., g.	3.8074	3.8257	3.8489
Filter Tare Wt., g.	3.4591	3.4728	3.4978
Filter Sample Wt., g.	0.3492	0.3533	0.3520
Filter Fragments in Rinse(Yes, No)?	YES	YES	YES

Rinse Container #	317	109	866
Date	Date	Date	Date
05/22	05/22	05/22	05/22
Init: CLT @	Init: CLT @	Init: CLT @	Init: CLT @
Tare Wt., g.	3.2527	3.6162	3.1458
RINSE SAMPLE WT., g.	3.2530	3.6163	3.1456
(120 ml)	3.2479	3.6127	3.1416
	0.0048	0.0035	0.0040

Filter Catch, mg.	-0.9	-0.4	-0.9
Rinse Catch, mg.	4.8	3.5	4.0
Rinse Blank Residue, mg.	0.1	0.1	0.1
Net Rinse Catch, mg.	4.7	3.4	3.9
FILTERABLE PARTICULATE, mg.	3.8	3.0	3.0

Blank Beaker #	464
Final wt., mg.	3.3077
Tare wt., mg.	3.3076
Residue, mg.	0.1
Volume, ml.	150
Density, mg/ml	785.0
Conc., mg/mg	8.5E-07 ←
Upper Limit, mg/mg	1.0E-05

Legend:
 @ = Final Weight
 F = Filter
 R = Rinse

Miscellaneous Notes & Comments:

Printing Date:

22-May-2001

Printing Time:

10:33 AM

REAGENT BLANK LABORATORY RESULTS (Version 04.28.92)

Plant Name: FP&L	REF # 7623
Method: MS	Filename: EER
Date Received: 5/16/2001	Page 2 of 2
File Pathway: C:\Q0817623\EER.W01	
Run Number	ACETONE BLANK

Sample ID/Container # 464

Date	Init
------	------

	05/22	CLT	@	3.3077
Tare Wt., g.	05/16	CLT		3.3079
SAMPLE WT., g.		(150	ml)	3.3076
				0.0001

Particulate Worksheet

Client EER # 7623 FP+L

Rel. Humidity 42%

Analyst CLT

Date 5.15.01

Filter

Acetone Rinse

Nozzle Cyclone

MeCl2

RUN#	Cont. #	Filter #	Filter Tare	Cont. #	Vol. (mls)	Cont. #	Vol. (mls)	Cont. #
8A-100-M5-1	1121	RQ1167	.3492	317	120			
2	1202	12Q-1169	.3533	109	130			
3	69	RQ-1175	.3520	85 866	130			
Blank				464	150			

Q-15

Energy and
Environmental
Research Corporation

18 Mason, Irvine, CA 92718
tel: (714) 859-8851
fax: (714) 859-3194

Laboratory Report Due by _____ to:
EER Contact: _____ Address: _____
tel: () _____
fax: () _____

Sample Chain of Custody Record

EER Project No: 7623		Sampling System Prepared by: D. RITCHIE				Analyses Required
Project Name: GE PPSD MARTIN STATION		Test Operator(s): D. RITCHIE				
Site Name: FP&L		Samples Recovered by: D. RITCHIE				
Laboratory I.D. No.	EER Label No.	FIELD SAMPLE IDENTIFICATION AND SAMPLING INFORMATION				No. of Containers
		Test ID / Location	Physical Description	Date	Time	
BLANK	212867	#8A STACK	ACETONE BLANK	05-08-01		1
BA-M5-100-1	212821	#8A STACK	FILTER	05-08-01		1
BA-M5-100-1	212753	#8A STACK	FRONT 1/2 ACETONE RINSE	05-07-01		1
BA-M5-100-2	212793	#8A STACK	FILTER	05-07-01		1
BA-M5-100-2	212792	#8A STACK	FRONT 1/2 ACETONE RINSE	05-07-01		1
BA-M5-100-3	212823	#8A STACK	FILTER	05-08-01		
BA-M5-100-3	212822	#8A STACK	FRONT 1/2 ACETONE RINSE	05-08-01		
Method of Shipment:		Remarks (RUSH!, units: mg/L, ppm, etc.):		Relinquished by: (Sign & Print)		Date / Time:
Shipment I.D.:		Date Shipped:		M White		5/15
Samples Shipped to:		After analysis: <input type="checkbox"/> Archive samples (Hold for _____ months, then dispose.)				
Attention:		<input type="checkbox"/> Return samples to: EER Corporation 8001 Irvine Blvd., Irvine, CA 92705				

91-2

GE EER

METER BOX CALIBRATION DOCUMENTATION

Meter Box # NCA-4
 Date: 5/2/01
 Cal by: MWhite

Project# OH
 Reference Calibration Meter Gamma 0.9996
 Barometric Pressure: 30.20

OPERATING CONDITIONS dH Time		DRY GAS METER					REFERENCE CAL. METER				
		Volume Readings, ft ³			Temperatures		Volume Readings, ft ³			Temperatures	
		Initial	Final	Total	DGM _i	DGM _f	Initial	Final	Total	RGM _i	RGM _f
0.5	22.50	67.100	76.202	9.102	86	86	52.580	61.600	9.020	76	76
					87	87					
0.5	26.75	179.700	190.300	10.600	79	79	165.259	175.772	10.513	70	70
					79	79					
1.0	16.55	32.903	42.300	9.397	85	86	18.568	27.912	9.344	76	76
					85	86					
1.0	16.70	42.300	51.800	9.500	85	86	27.912	37.368	9.456	76	77
					86	87					
1.5	16.20	983.100	994.000	10.900	79	79	968.791	979.600	10.809	75	75
					79	79					
1.5	10.75	994.000	1001.350	7.350	79	79	979.600	986.906	7.306	75	75
					79	79					
2.0	18.15	3.203	17.204	14.001	83	83	988.813	1002.847	14.034	76	76
					84	84					
2.0	20.00	17.204	32.595	15.391	84	84	1002.847	1018.250	15.403	76	76
					85	86					
2.5	16.25	134.805	148.908	14.103	80	80	120.371	134.520	14.149	70	70
					80	80					
2.5	32.60	148.908	177.261	28.353	81	81	134.520	162.840	28.320	70	70
					82	82					

DH	GAMMA	Diff. From Ave.		Delta H@	Diff. From Ave.	
		Value	within 0.02?		Value	within 0.2?
0.5	1.0087	0.001	Pass	1.7168	0.080	Pass
0.5	1.0070	0.001	Pass	1.7708	0.025	Pass
1	1.0091	0.001	Pass	1.7343	0.062	Pass
1	1.0101	0.002	Pass	1.7259	0.070	Pass
1.5	0.9950	0.013	Pass	1.8781	0.082	Pass
1.5	0.9974	0.011	Pass	1.8102	0.014	Pass
2	1.0110	0.003	Pass	1.8561	0.060	Pass
2	1.0117	0.004	Pass	1.8667	0.070	Pass
2.5	1.0156	0.008	Pass	1.8006	0.004	Pass
2.5	1.0139	0.006	Pass	1.8038	0.008	Pass

AVG. 1.0079

AVG. 1.7963

Performed By: Michael White

QC Review By: _____

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Meter Box Post Test Calibration Check

Florida Power & Light
Indiantown, FL

Unit 8A Stack

Meter Box : NCA-1

Calibrated by: DR
5-Pt Cal Date: 11/2/99

Delta H @ 1.7963
Gamma, initial 1.0079

Calculate Yqa for each test run using the following equation:

$$Y_{qa} = \frac{\theta}{V_m} \sqrt{\frac{0.0319 T_m}{\Delta H @ (P_b + \Delta \frac{H_{avg}}{13.6})} \frac{29}{M_d}} (\sqrt{\Delta H})_{avg}$$

where:

- Yqa dry gas meter calibration check value, dimensionless.
- q total run time, min.
- Vm total sample volume measured by dry gas meter, dcf.
- Tm absolute average dry gas meter temp., °R.
- Pb barometric pressure, in. Hg.
- 0.0319 = (29.92/528)(0.75)² (in. Hg/°R) cfm².
- ΔHavg average orifice meter differential, in. H2O.
- ΔH@ orifice meter calibration coefficient, in. H2O.
- Md dry molecular weight of stack gas, lb/lb-mole.
- 29 dry molecular weight of air, lb/lb-mole.
- 13.6 specific gravity of mercury.

After each test run series, do the following:

Average the three or more Yqa's obtained from the test run series and compare this average with the dry gas meter calibration factor, Y. The average Yqa must be within 5 percent of Y.

If the average Yqa does not meet the +5 percent criterion, recalibrate the meter over the full range of orifice settings, as detailed in Section 5.3.1 of Method 5. Then follow the procedure in Section 5.3.3 of Method 5.

	Test 1	Test 2	Test 3
time	180	180	180
Vm - total	111.701	112.476	141.509
Tm avg	82.0	77.8	84.4
Tm -R	542	538	544
Barometric	30.05	30.05	30.05
ΔH _{avg}	1.299	1.351	2.140
ΔH@	1.7963	1.7963	1.7963
Md stack gas	29.22	29.22	29.22
Md Air	29.00	29.00	29.00
Meter Box Gamma	1.0079	1.0079	1.0079
QA Gamma	1.0187	1.0288	1.0417
Difference:	1.1%	2.1%	3.3%
within 5%?	PASS	PASS	PASS

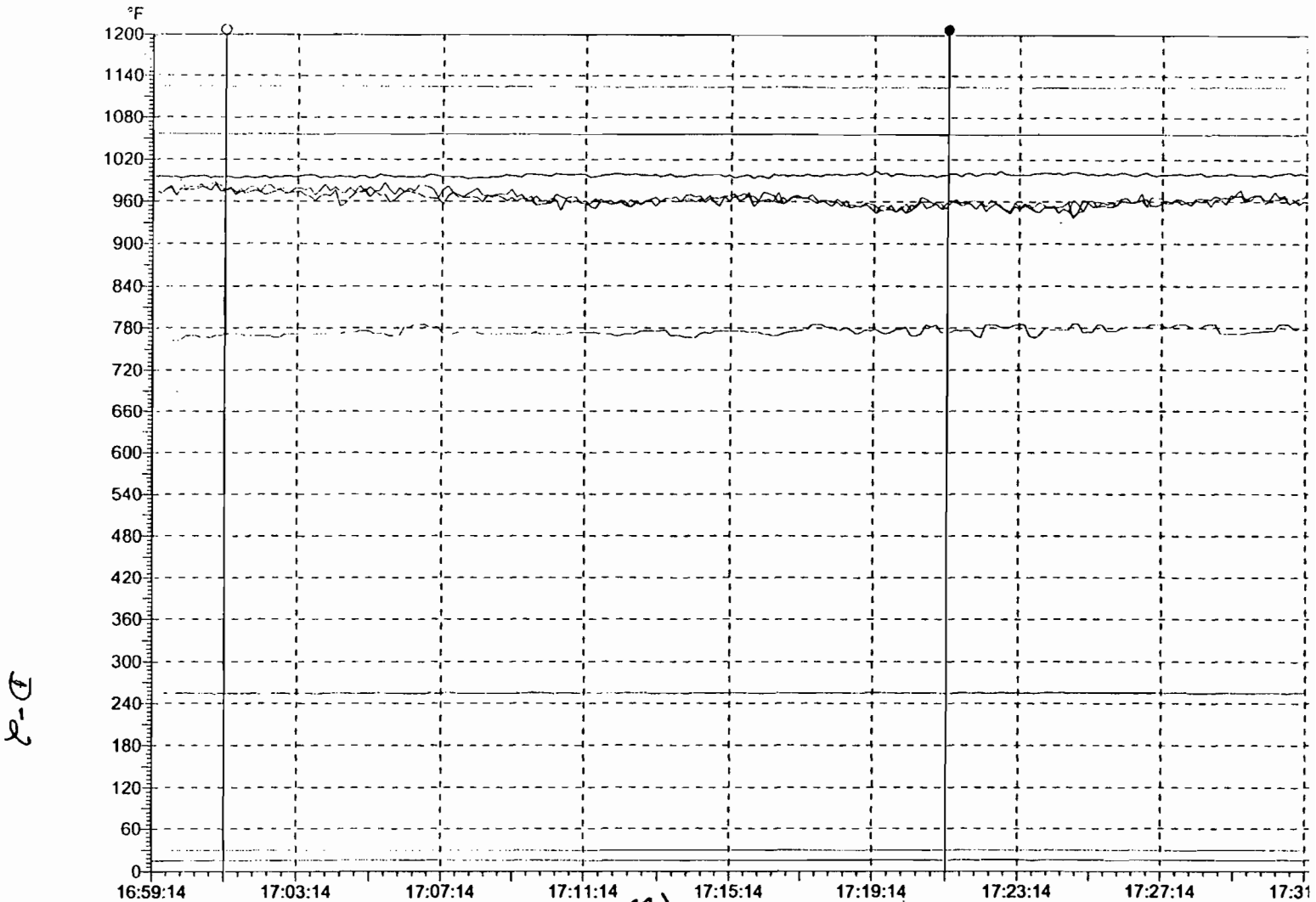
Appendix D

Unit 8A
PROCESS OPERATING DATA

Run 1 @ 100 % Load	Start							Average
	Time	17:21	17:41	18:01				
Mean Turbine Exhaust Temperature, TTXM	1123.86	1124.3	1123.45					1123.88
Fuel Flow, FQG	21.2607	21.2789	21.3676					21.3233
Compressor Inlet Temperature, CTIF1	79.9	79.9	78.559					79.2295
CTIF2	79.4	79.36	78.164					78.762
CTIFM	79.4	79.36	78.125					78.7425
Specific Humidity, CMHUM	0.01309	0.013368	0.012896					0.01313
Inlet Guide Vane Angle, CSGV	88.02	88.02	88.02					88.0185
Generator Output, DWAT	166.49	166.6	167.112					166.856
Compressor Discharge Pressure, CPD	210.37	210.327	211.063					210.695

Run 2	Time	19:10	19:19	19:40					Average
	Mean Turbine Exhaust Temperature, TTXM	1119.82	1119.69	1119.33					
Fuel Flow, FQG	21.609	21.635	21.6484						21.6308
Compressor Inlet Temperature, CTIF1	73.56	73.58	72.867						73.3357
CTIF2	74.01	73.88	72.1094						73.3331
CTIFM	73.57	73.58	72.329						73.1597
Specific Humidity, CMHUM	0.011589	0.01156	0.011787						0.01165
Inlet Guide Vane Angle, CSGV	88.02	88.02	88.02						88.0226
Generator Output, DWAT	170.063	169.909	170.309						170.094
Compressor Discharge Pressure, CPD	213.198	213.288	213.432						213.306

Run 3	Time	20:50	21:01	21:21	21:33	21:41			Average
	Mean Turbine Exhaust Temperature, TTXM		1119.28	1119.12	1118.61	1118.53			
Fuel Flow, FQG		21.6818	21.7392	21.7229	21.7386				21.7206
Compressor Inlet Temperature, CTIF1		72.0918	72.106	71.6	71.57				71.842
CTIF2		71.81	71.89	71.6	71.55				71.7125
CTIFM		71.9249	71.89	71.57	71.52				71.7262
Specific Humidity, CMHUM		0.011641	0.011576	0.011783	0.011287				0.01157
Inlet Guide Vane Angle, CSGV		88.02	88.02	88.02	88.02				88.0209
Generator Output, DWAT		170.809	171.047	170.86	171.724				171.11
Compressor Discharge Pressure, CPD		213.718	213.822	214.042	214.077				213.915



Monday, May 07, 2001 04:59:14 PM EDT

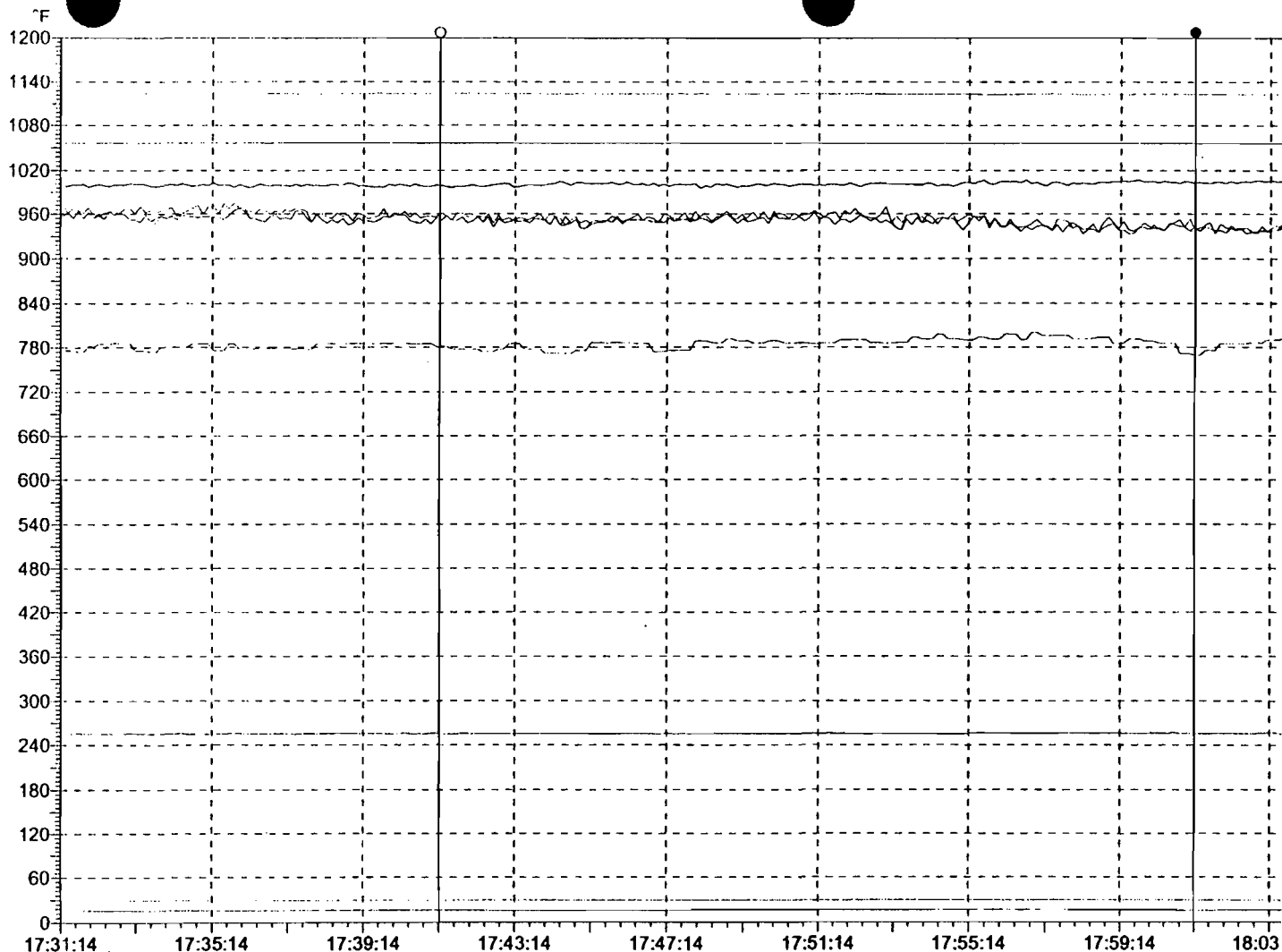
1721

Left Cursor 05/07/01 05:01:14 PM.149 - Right Cursor 05/07/01 05:21:14 PM.149 - Difference 1200 seconds

Pen	Signal Name	Left Value	Right Value	Units	Description
<	G8A\TTXM	1124.82*	1123.86	°F	Exhaust Temp Median Corrected By Average
>	G8A\fgg	21.2102*	21.2607	lb/se	Gas Fuel Flow
	G8A\FQLM1	0*	0	lb/se	Liquid Fuel Mass Flow
	G8A\ctif1a	81.2153*	79.9432	°F	Compressor Inlet Thermocouple 1A
	G8A\ctif1b	81.3358*	79.465	°F	Compressor Inlet Thermocouple 1B
	G8A\CTIM	81.2153*	79.465	°F	Compressor Inlet Temperature
	G8A\CMHUM	0.0129866*	0.0130944	#H/#A	Specific Humidity
	G8A\DWATT	165.95*	166.494	MW	Generator Watts Max Selected
	G8A\cpd	209.867*	210.375	psia	Compressor Discharge Press Max Select
	G8A\csgv	88.0191*	88.0178	DGA	IGV angle in deg
	G8A\WQ	2.46031*	2.46039	lb/se	Water Injection Flow from Feedback
	G8A\WXJ	2.09476e+038*	2.09483e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
	G8A\WXC	0*	0	ratio	Ratio of Required Fuel to NOx Water Flow
	G8A\itdp	64.2756*	64.5105	°F	Inlet Dew Point Temperature

GA
100%
Run 1

D-3

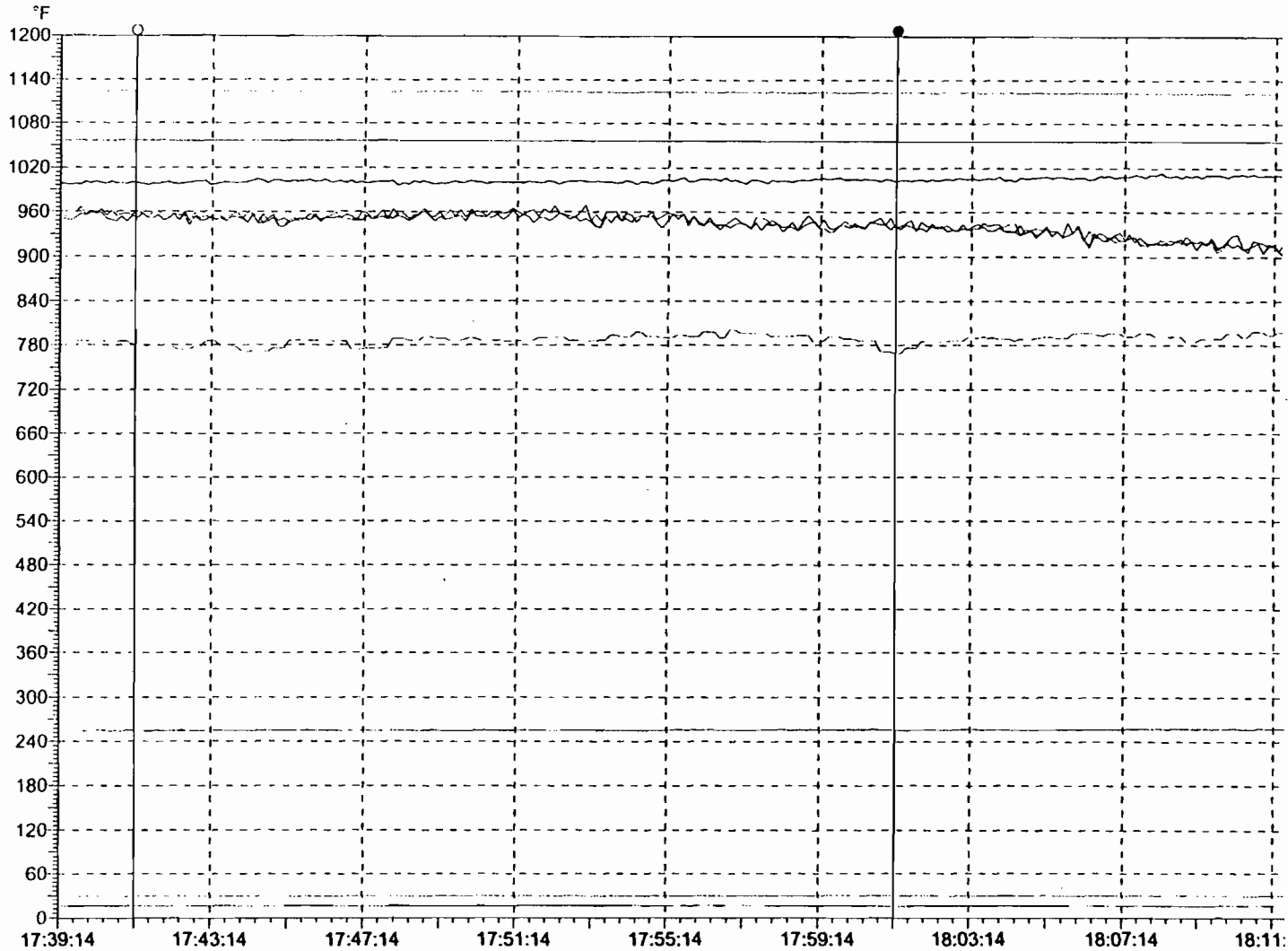


Monday, May 07, 2001 05:31:14 PM EDT

Left Cursor 05/07/01 05:41:14 PM.149 - Right Cursor 05/07/01 06:01:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1124.3	1123.46	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.2789	21.3687	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	79.9826	78.5768	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	79.3644	78.1512	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	79.3644	78.1263	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0133679	0.0128956	#H/#A	Specific Humidity
		G8A\DWATT	166.601	167.106	□	Generator Watts Max Selected
		G8A\cpd	210.327	211.06	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0192	88.0182	DGA	IGV angle in deg
		G8A\WQ	2.46135	2.46236	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.09565e+038	2.09651e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\tdp	65.1084	64.1063	°F	Inlet Dew Point Temperature

D-4

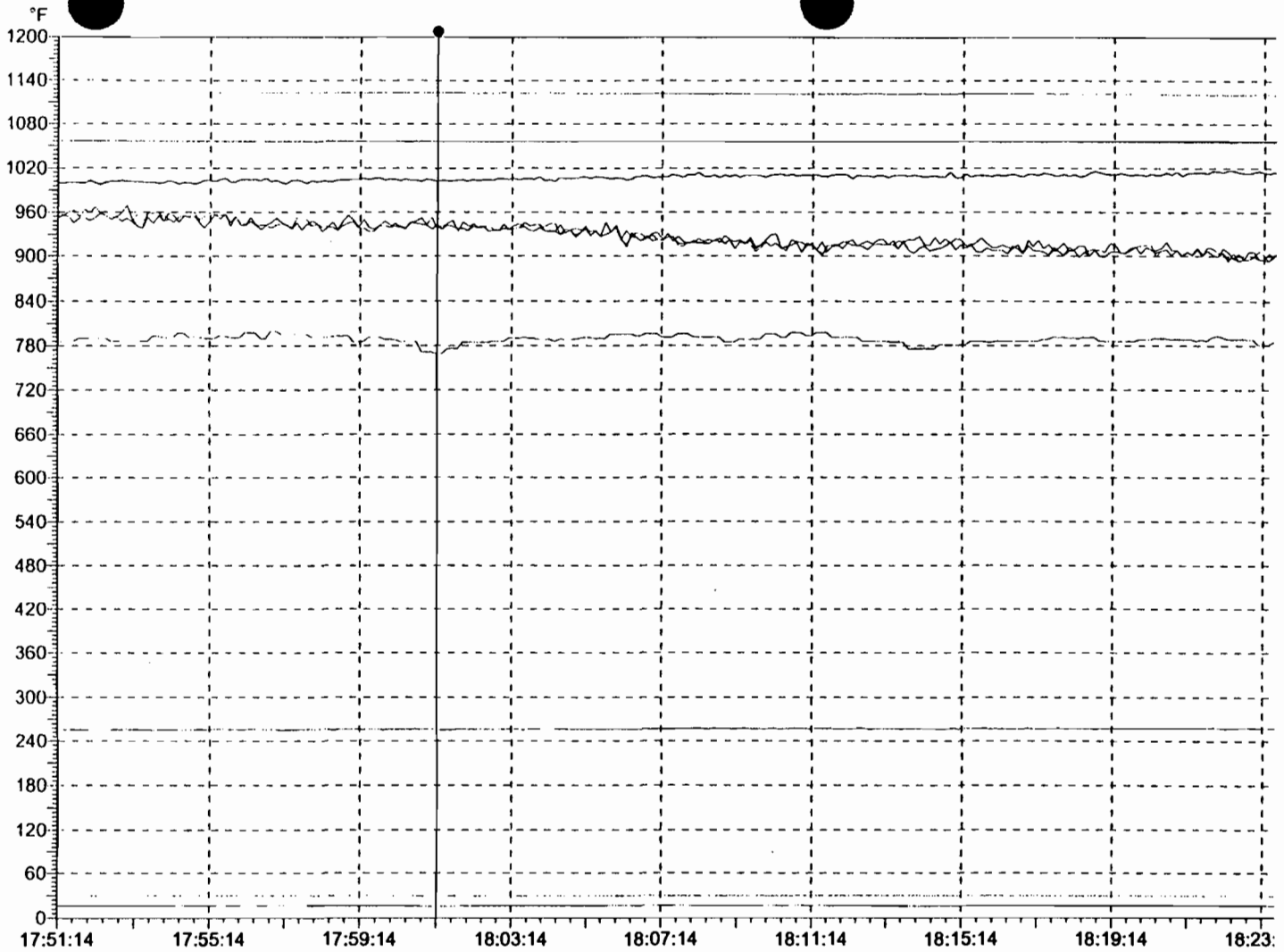


Monday, May 07, 2001 05:39:14 PM EDT

Left Cursor 05/07/01 05:41:14 PM.149 - Right Cursor 05/07/01 06:01:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A1TTXM	1124.3	1123.45	°F	Exhaust Temp Median Corrected By Average
>		G8A1fgg	21.2799	21.3676	lb/se	Gas Fuel Flow
		G8A1FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A1ctif1a	79.9716	78.5595	°F	Compressor Inlet Thermocouple 1A
		G8A1ctif1b	79.3705	78.164	°F	Compressor Inlet Thermocouple 1B
		G8A1CTIM	79.3705	78.1251	°F	Compressor Inlet Temperature
		G8A1CMHUM	0.0133683	0.0128959	#H/#A	Specific Humidity
		G8A1DWATT	166.602	167.112	MW	Generator Watts Max Selected
		G8A1cpd	210.329	211.063	psia	Compressor Discharge Press Max Select
		G8A1csgv	88.0192	88.0178	DGA	IGV angle in deg
		G8A1WQ	2.46135	2.46235	lb/se	Water Injection Flow from Feedback
		G8A1WXJ	2.09565e+038	2.0965e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		itdp	65.109	64.1066	°F	Inlet Dew Point Temperature

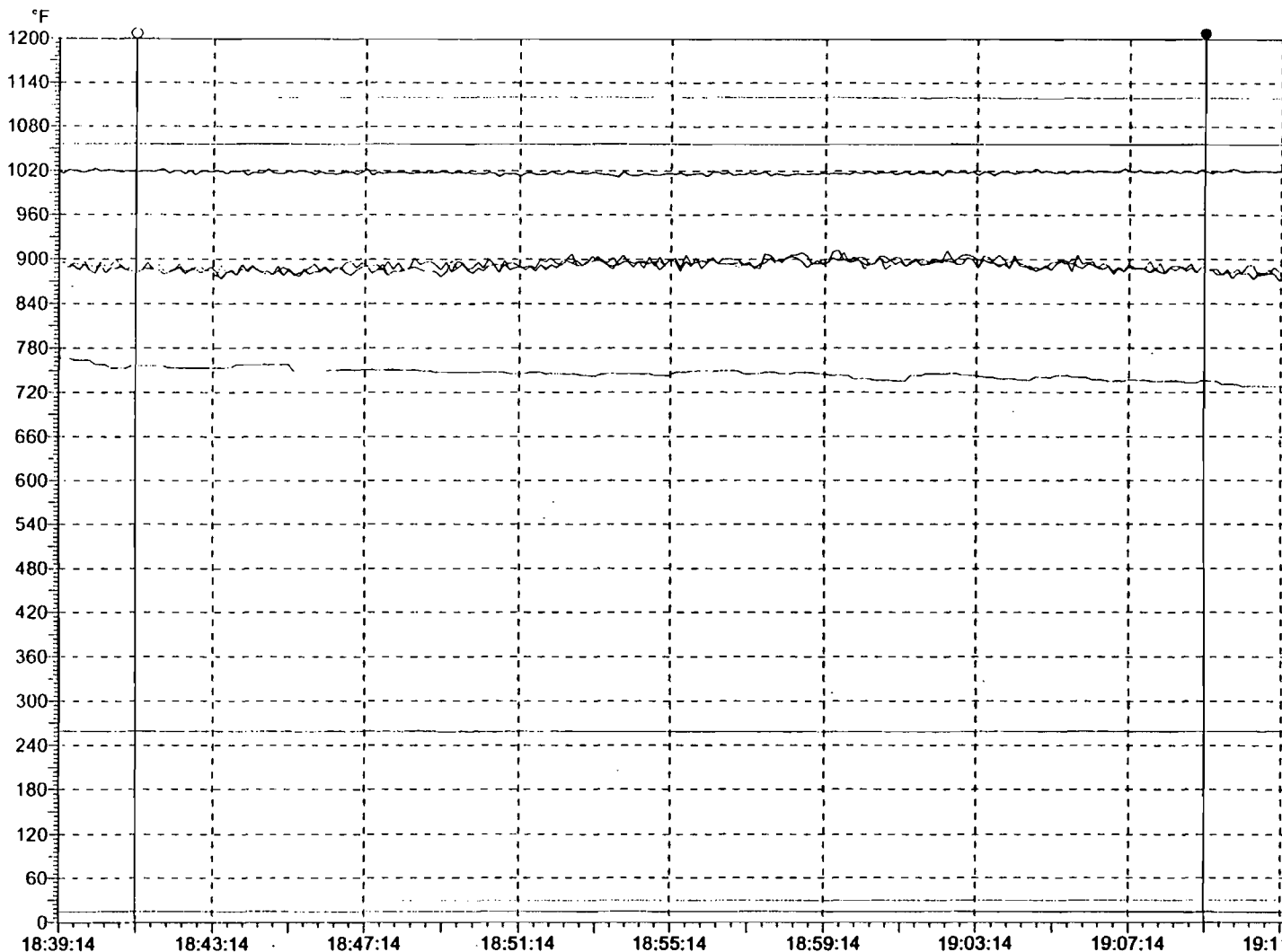
D-5



Monday, May 07, 2001 05:51:14 PM EDT

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Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1123.46	1123.46	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	21.3678	21.3678	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	78.5624	78.5624	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	78.1619	78.1619	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	78.1253	78.1253	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0128958	0.0128958	#H/#A	Specific Humidity
		G8A\DWATT	167.111	167.111	MW	Generator Watts Max Selected
		G8A\cpd	211.063	211.063	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0179	88.0179	DGA	IGV angle in deg
		G8A\WQ	2.46235	2.46235	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.0965e+038	2.0965e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\tdp	64.1066	64.1066	°F	Inlet Dew Point Temperature



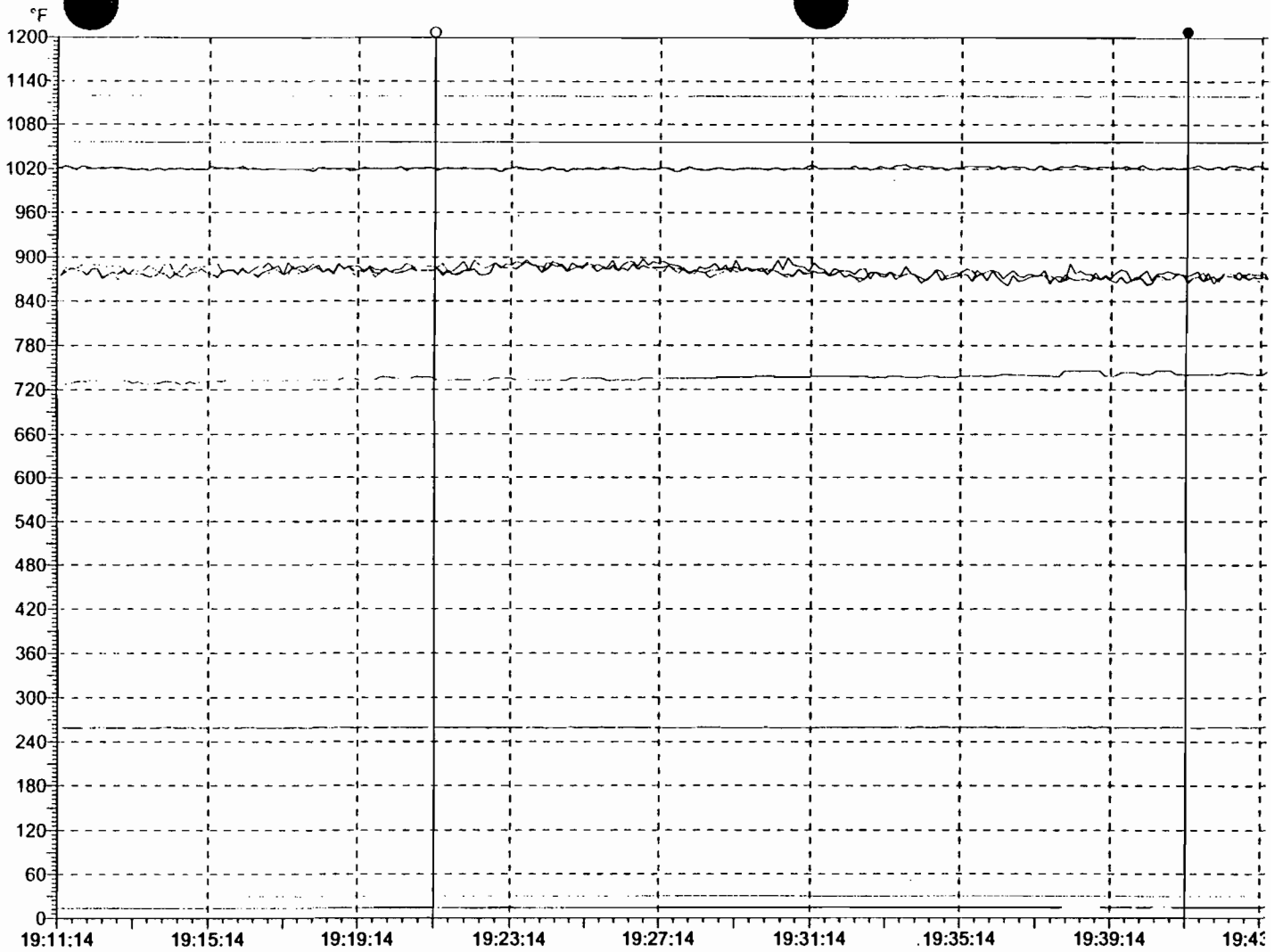
Monday, May 07, 2001 06:39:14 PM EDT

Left Cursor 05/07/01 06:41:14 PM.149 - Right Cursor 05/07/01 07:09:14 PM.149 - Difference 1680 seconds

BA 1
Run 2

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1120.43	1119.82	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.619	21.609	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	73.5729	73.5689	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	74.1075	74.0103	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	73.5729	73.5689	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0124014	0.0115899	#H/#A	Specific Humidity
		G8A\DWATT	169.675	170.063	MW	Generator Watts Max Selected
		G8A\cpd	212.754	213.198	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0133	88.0241	DGA	IGV angle in deg
		G8A\WQ	2.46652	2.46904	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10005e+038	2.10219e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	63.049	61.3197	°F	Inlet Dew Point Temperature

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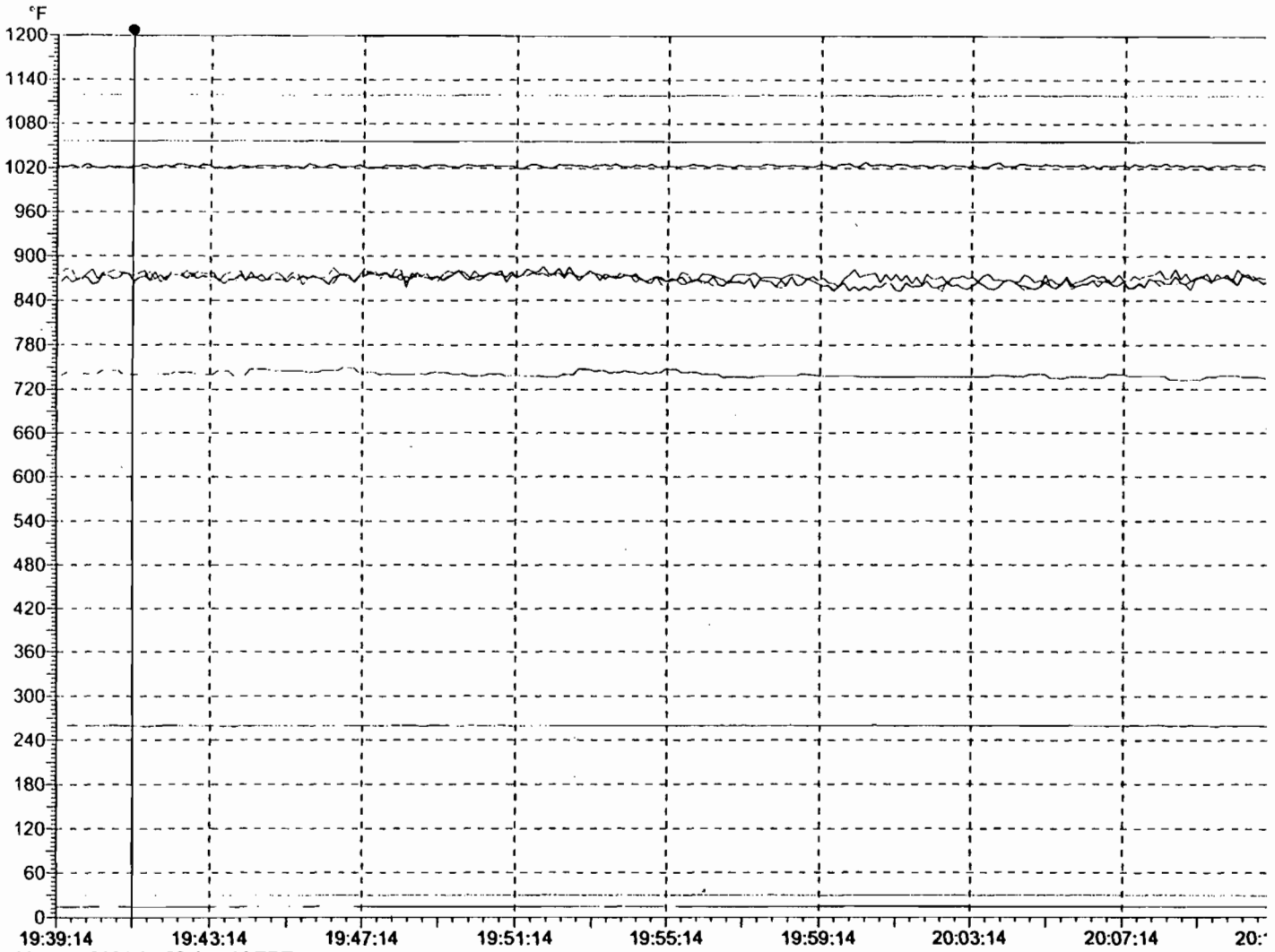


Monday, May 07, 2001 07:11:14 PM EDT

Left Cursor 05/07/01 07:21:14 PM.149 - Right Cursor 05/07/01 07:41:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1119.69	1119.33	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.6354	21.6484	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	73.5823	72.8667	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	73.8822	72.1094	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	73.5823	72.3296	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0115595	0.0117865	#H/#A	Specific Humidity
		G8A\DWATT	169.909	170.309	MW	Generator Watts Max Selected
		G8A\cpd	213.288	213.432	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.021	88.0227	DGA	IGV angle in deg
		G8A\WQ	2.46972	2.47191	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10277e+038	2.10464e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.2544	61.7371	°F	Inlet Dew Point Temperature

D-8

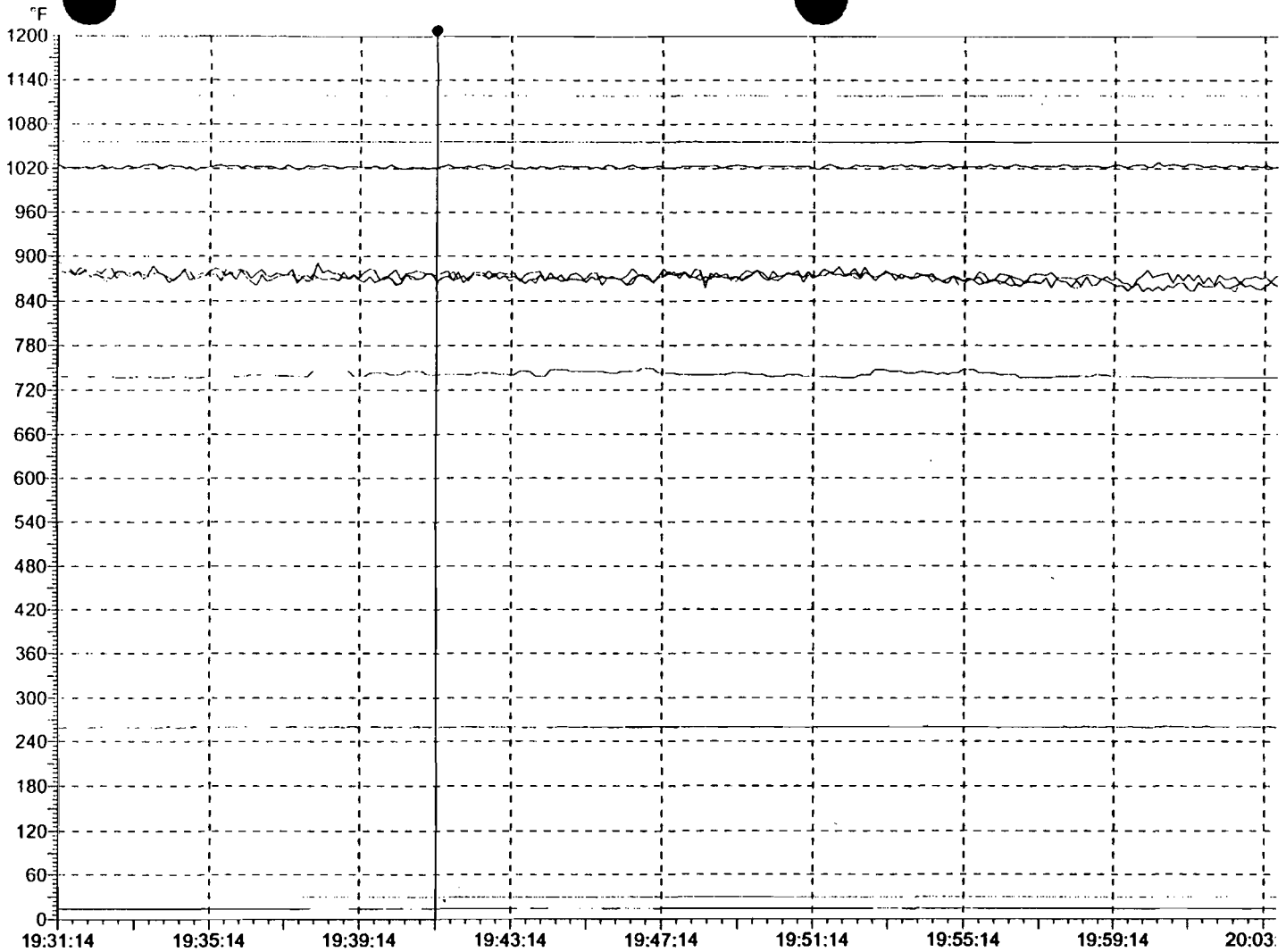


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Left Cursor 05/07/01 07:41:14 PM.149 - Right Cursor 05/07/01 07:41:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1119.33	1119.33	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.6482	21.6482	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	72.8661	72.8661	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	72.1029	72.1029	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	72.3254	72.3254	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0117865	0.0117865	#H/#A	Specific Humidity
		G8A\DWATT	170.309	170.309	MW	Generator Watts Max Selected
		G8A\cpd	213.432	213.432	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0227	88.0227	DGA	IGV angle in deg
		G8A\WQ	2.47191	2.47191	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10464e+038	2.10464e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.7371	61.7371	°F	Inlet Dew Point Temperature

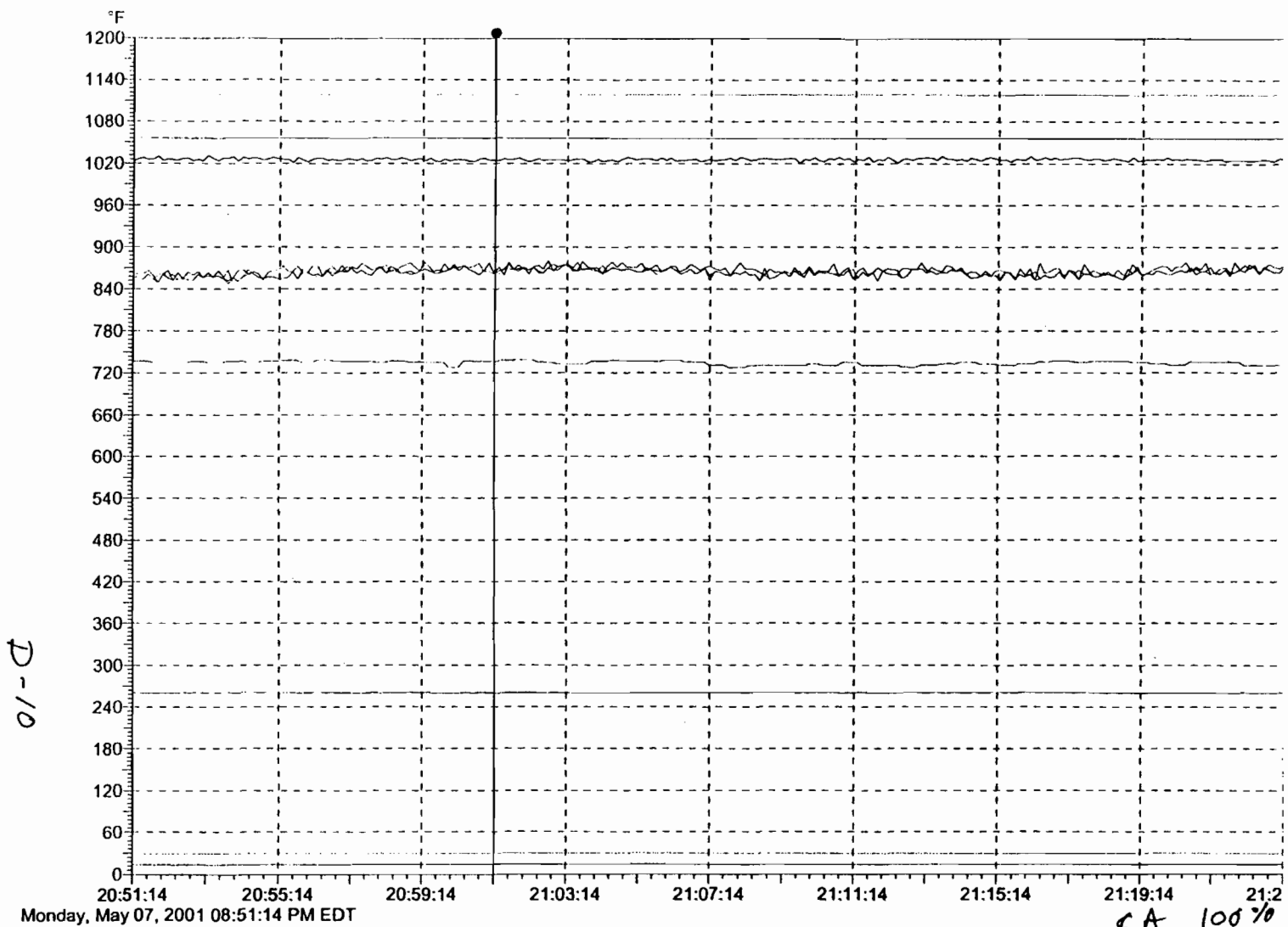
D-9



Monday, May 07, 2001 07:31:14 PM EDT

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Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1119.32	1119.32	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.6475	21.6475	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	72.8637	72.8637	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	72.0768	72.0768	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	72.3085	72.3085	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0117865	0.0117865	#H/#A	Specific Humidity
		G8A\DWATT	170.312	170.312	MW	Generator Watts Max Selected
		G8A\cpd	213.432	213.432	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0228	88.0228	DGA	IGV angle in deg
		G8A\WQ	2.47191	2.47191	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10464e+038	2.10464e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.737	61.737	°F	Inlet Dew Point Temperature



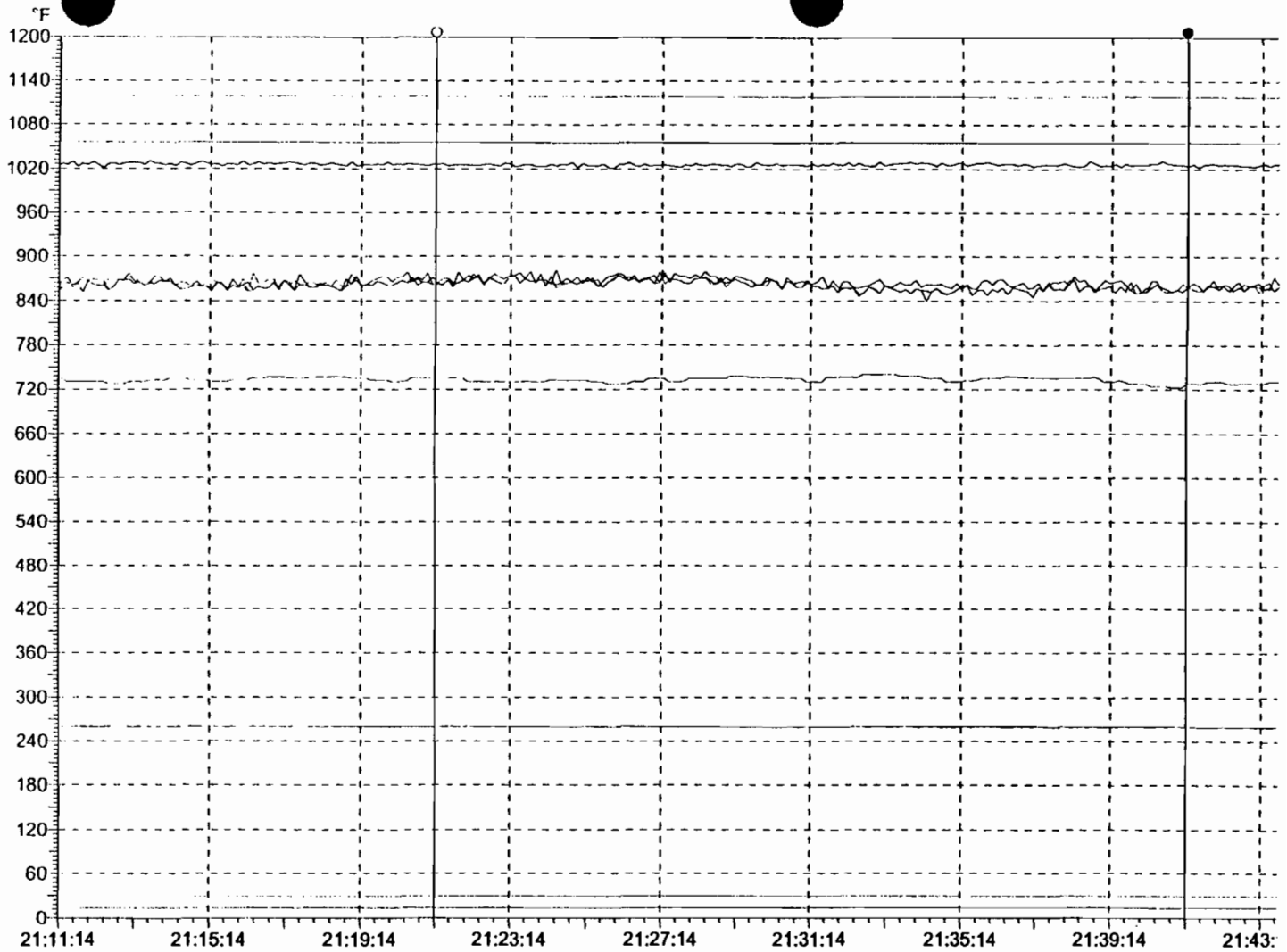
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Left Cursor 05/07/01 09:01:14 PM.149 - Right Cursor 05/07/01 09:01:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1119.28	1119.28	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.6818	21.6818	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	72.0918	72.0918	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	71.8101	71.8101	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	71.9249	71.9249	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0116414	0.0116414	#H/#A	Specific Humidity
		G8A\DWATT	170.809	170.809	MW	Generator Watts Max Selected
		G8A\cpd	213.718	213.718	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0234	88.0234	DGA	IGV angle in deg
		G8A\WQ	2.47312	2.47312	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	0.000067e+03	2.10567e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.4577	61.4577	°F	Inlet Dew Point Temperature

GA 100%
Run 3

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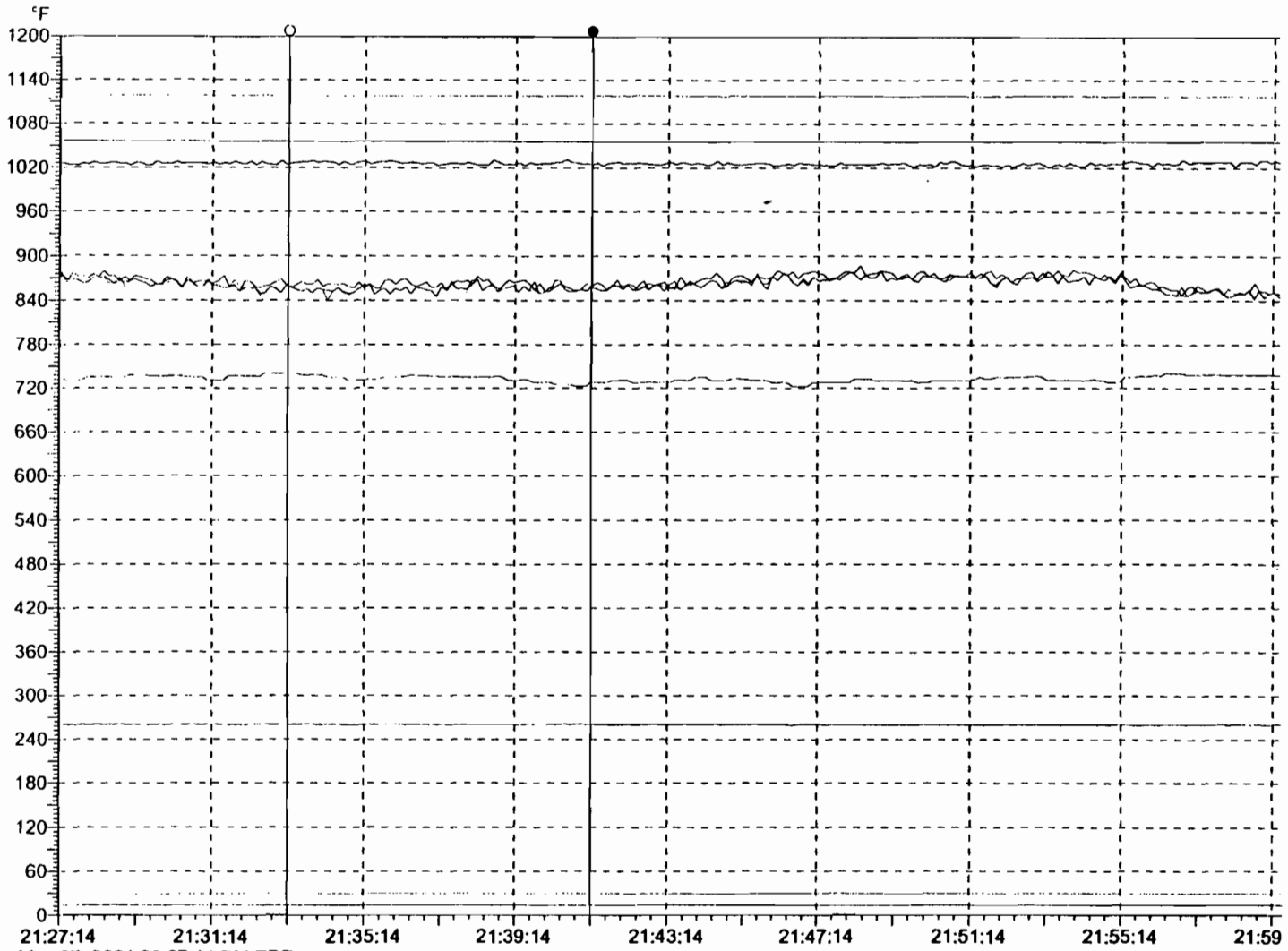


Monday, May 07, 2001 09:11:14 PM EDT

Left Cursor 05/07/01 09:21:14 PM.149 - Right Cursor 05/07/01 09:41:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1119.12	1118.53	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.7392	21.7386	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	72.1061	71.5702	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	71.8984	71.5532	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	71.8984	71.5252	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0115758	0.0112871	#H/#A	Specific Humidity
		G8A\DWATT	171.047	170.724	MW	Generator Watts Max Selected
		G8A\cpd	213.822	214.077	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.0219	88.024	DGA	IGV angle in deg
		G8A\WQ	2.47209	2.47471	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10479e+038	2.10702e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.3065	60.6992	°F	Inlet Dew Point Temperature

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Monday, May 07, 2001 09:27:14 PM EDT

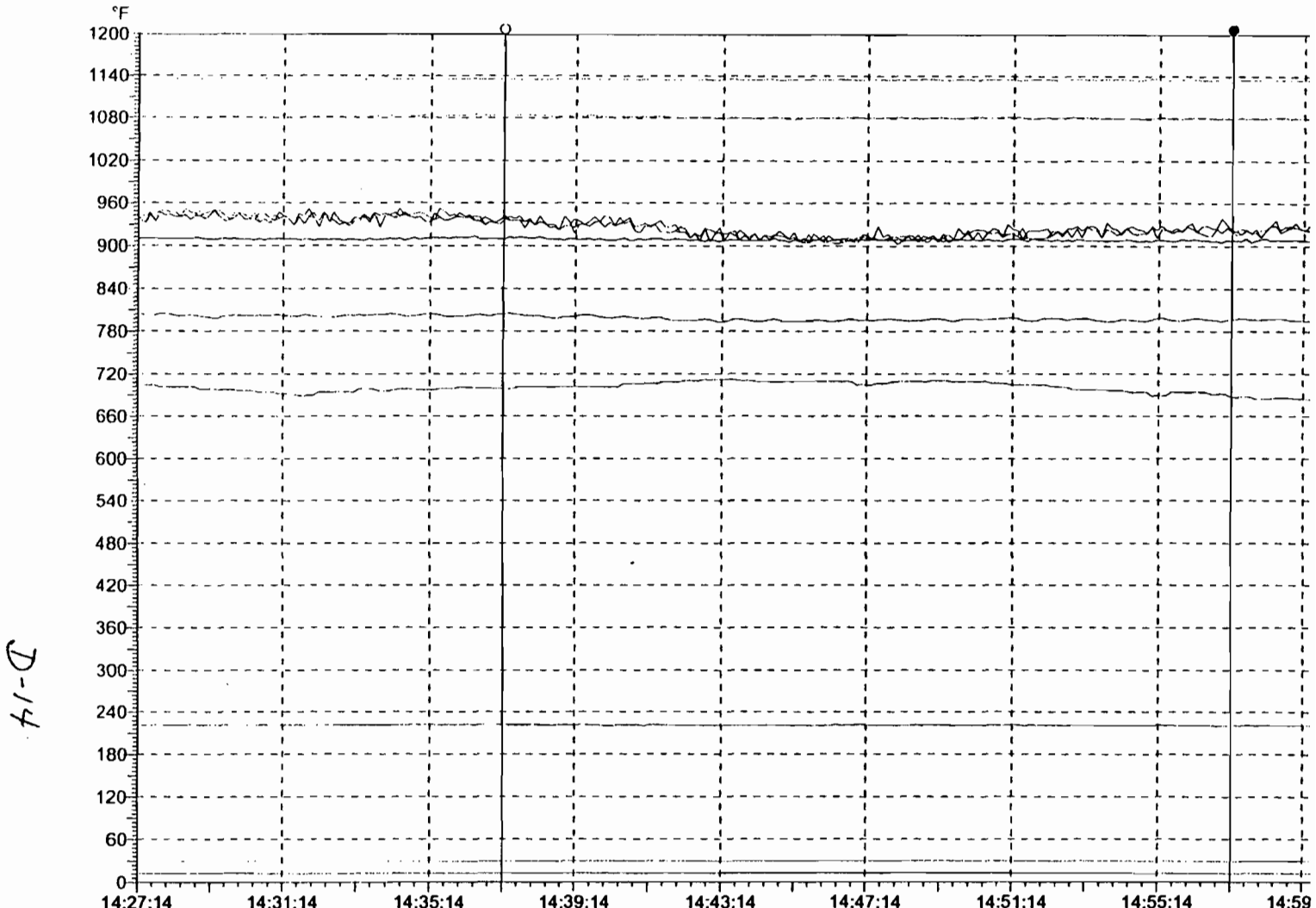
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Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1118.61	1118.53	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	21.7229	21.7397	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	71.6105	71.5873	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	71.6337	71.5407	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	71.5788	71.5407	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0117829	0.0112943	#H/#A	Specific Humidity
		G8A\DWATT	170.86	170.715	MW	Generator Watts Max Selected
		G8A\cpd	214.042	214.081	psia	Compressor Discharge Press Max Select
		G8A\csgv	88.021	88.024	DGA	IGV angle in deg
		G8A\WQ	2.47352	2.47472	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10601e+038	2.10703e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	61.7519	60.7149	°F	Inlet Dew Point Temperature

Run 1 @ 85% Load								Average
	Time	14:37	14:57	14:31	14:47			
Mean Turbine Exhaust Temperature, TTXM		1135.42	1135.89	1135.91	1134.35			1135.39
Fuel Flow, FQG		18.5044	18.4328	18.4841	18.4842			18.4764
Compressor Inlet Temperature, CTIF1		78.4	77.06	78.559	75.74			77.4398
CTIF2		78	76.77	77.87	76.048			77.172
CTIM		78	76.77	77.87	75.6464			77.0716
Specific Humidity, CMHUM		0.01038	0.01004	0.01009	0.01053			0.01026
Inlet Guide Vane Angle, CSGV		67.0057	66.41	66.8494	66.3098			66.6437
Generator Output, DWAT		139.545	139.172	139.384	139.282			139.346
Compressor Discharge Pressure, CPD		180.761	179.968	180.39	180.189			180.327

Run 2								Average
	Time	15:17	15:37	15:57				
Mean Turbine Exhaust Temperature, TTXM		1134.47	1135	1136.18				1135.22
Fuel Flow, FQG		18.5406	18.4555	18.3524				18.4495
Compressor Inlet Temperature, CTIF1		78.1341	77.1845	78.6344				77.9843
CTIF2		77.8557	77.27	78.431				77.8522
CTIFM		77.8557	77.18	78.14				77.7252
Specific Humidity, CMHUM		0.00912	0.00998	0.00999				0.0097
Inlet Guide Vane Angle, CSGV		67.2345	66.77	66.41				66.8048
Generator Output, DWAT		140.139	139.546	138.731				139.472
Compressor Discharge Pressure, CPD		181.35	180.525	179.777				180.551

Run 3								Average
	Time	16:17	16:37					
Mean Turbine Exhaust Temperature, TTXM		1135.63	1134.88					1135.26
Fuel Flow, FQG		18.511	18.513					18.512
Compressor Inlet Temperature, CTIF1		79.834	78.1278					78.9809
CTIF2		78.68	78.372					78.526
CTIFM		78.685	78.128					78.4065
Specific Humidity, CMHUM		0.01	0.00998					0.00999
Inlet Guide Vane Angle, CSGV		67.2439	66.7078					66.9759
Generator Output, DWAT		140.018	139.509					139.764
Compressor Discharge Pressure, CPD		180.941	180.398					180.67



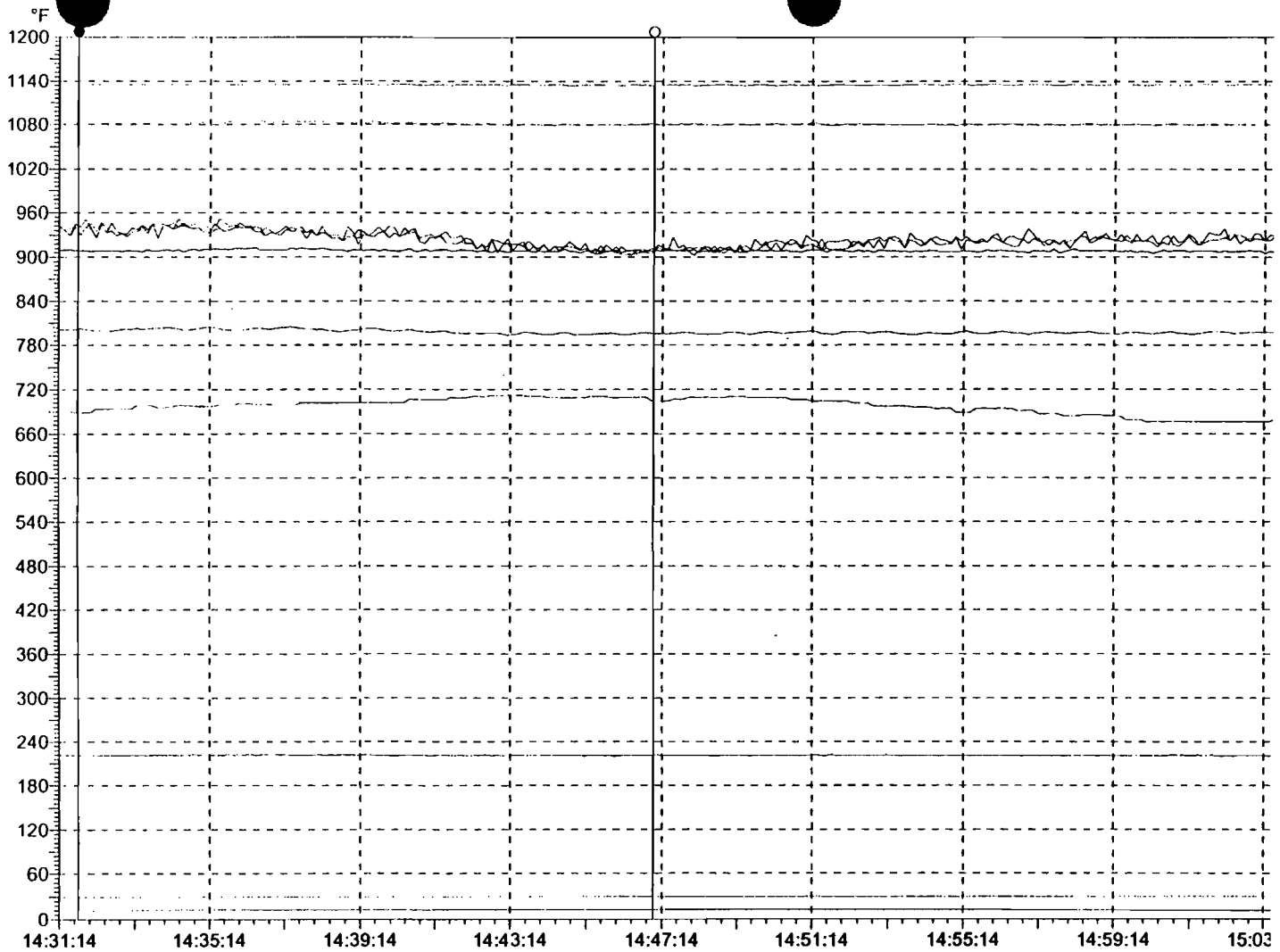
Tuesday, May 08, 2001 02:27:14 PM EDT

Left Cursor 05/08/01 02:37:14 PM.149 - Right Cursor 05/08/01 02:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1135.42	1135.89	°F	Exhaust Temp Median Corrected By Average
>		G8AIfg	18.5044	18.4328	lb/se	Gas Fuel Flow
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8Aclif1a	78.399	77.0161	°F	Compressor Inlet Thermocouple 1A
		G8Aclif1b	78.0053	76.776	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	78.0053	76.776	°F	Compressor Inlet Temperature
		G8AICMHUM	0.0103843	0.0100366	#H/#A	Specific Humidity
		G8AIDWATT	139.545	139.172	MW	Generator Watts Max Selected
		G8Alcpd	180.761	179.968	psia	Compressor Discharge Press Max Select
		G8Alcsgv	67.0057	66.41	DGA	IGV angle in deg
		G8AIWQ	2.46474	2.46591	lb/se	Water Injection Flow from Feedback
		G8AIWXJ	2.09853e+038	2.09953e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8AIWtdp	58.2658	57.2485	°F	Inlet Dew Point Temperature

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859
R02

D-15

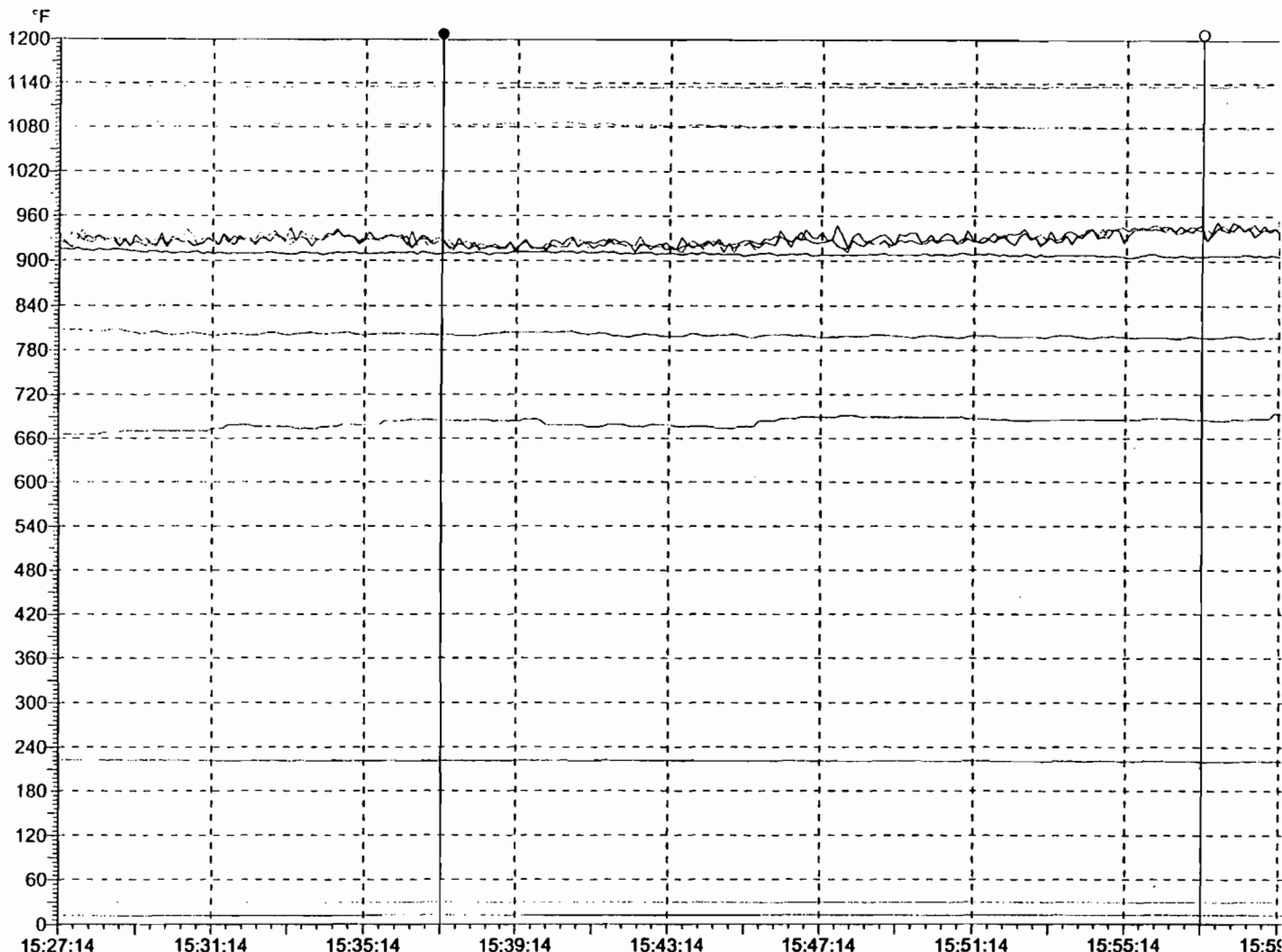


Tuesday, May 08, 2001 02:31:14 PM EDT

Left Cursor 05/08/01 02:31:43 PM.879 - Right Cursor 05/08/01 02:47:00 PM.095 - Difference 916.216 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1135.91	1134.35	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	18.4841	18.4842	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	78.5591	75.7403	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	77.8797	76.048	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	77.8797	75.6464	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0100897	0.0105327	#H/#A	Specific Humidity
		G8A\DWATT	139.384	139.282	MW	Generator Watts Max Selected
		G8A\cpd	180.39	180.189	psia	Compressor Discharge Press Max Select
		G8A\csgv	66.8494	66.3098	DGA	IGV angle in deg
		G8A\WQ	2.4646	2.4644	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.09842e+038	2.09824e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	57.4039	58.7173	°F	Inlet Dew Point Temperature

D-16

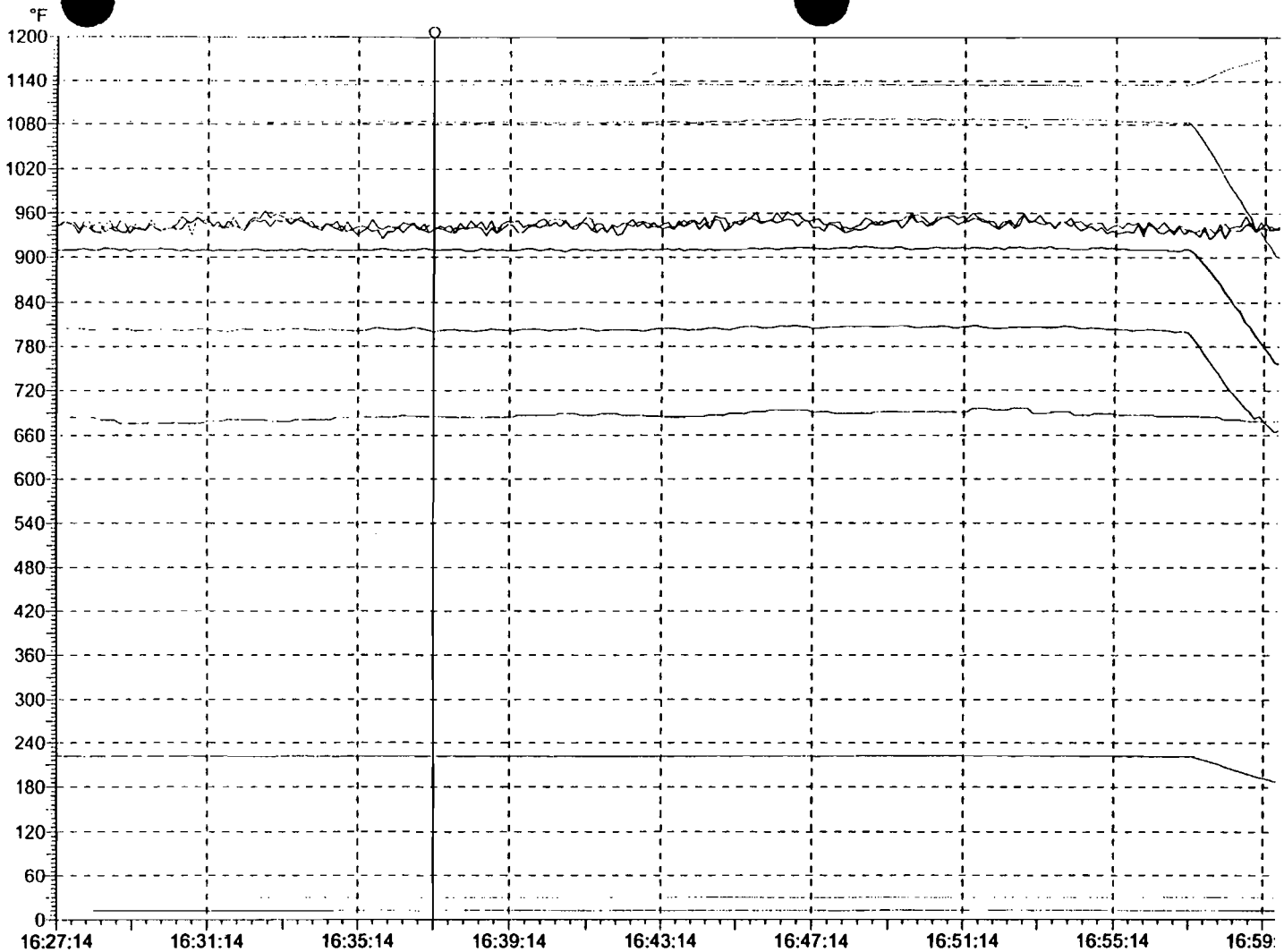


Tuesday, May 08, 2001 03:27:14 PM EDT

Left Cursor 05/08/01 03:37:14 PM.149 - Right Cursor 05/08/01 03:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1135	1136.18	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	18.4555	18.3524	0.0025	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	77.1845	78.6344	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	77.2718	78.4314	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	77.1845	78.1407	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.00998435	0.0099946	#H/#A	Specific Humidity
		G8A\DWATT	139.546	138.731	MW	Generator Watts Max Selected
		G8A\cpd	180.525	179.777	psia	Compressor Discharge Press Max Select
		G8A\csgv	66.7706	66.4109	DGA	IGV angle in deg
		G8A\WQ	2.46741	2.46684	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10081e+038	2.10032e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\Wtdp	57.0836	57.1148	°F	Inlet Dew Point Temperature

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Tuesday, May 08, 2001 04:27:14 PM EDT

8A 85%

Left Cursor 05/08/01 04:37:14 PM.149 - Right Cursor 05/08/01 04:37:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1134.88	1134.88	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	18.5141	18.5141	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	78.1393	78.1393	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	78.3638	78.3638	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	78.1393	78.1393	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.00997982	0.00997982	#H/#A	Specific Humidity
		G8A\DWATT	139.5	139.5	MW	Generator Watts Max Selected
		G8A\cpd	180.393	180.393	psia	Compressor Discharge Press Max Select
		G8A\csgv	66.7032	66.7032	DGA	IGV angle in deg
		G8A\WQ	2.46776	2.46776	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.1011e+038	2.1011e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\tdp	57.0718	57.0718	°F	Inlet Dew Point Temperature

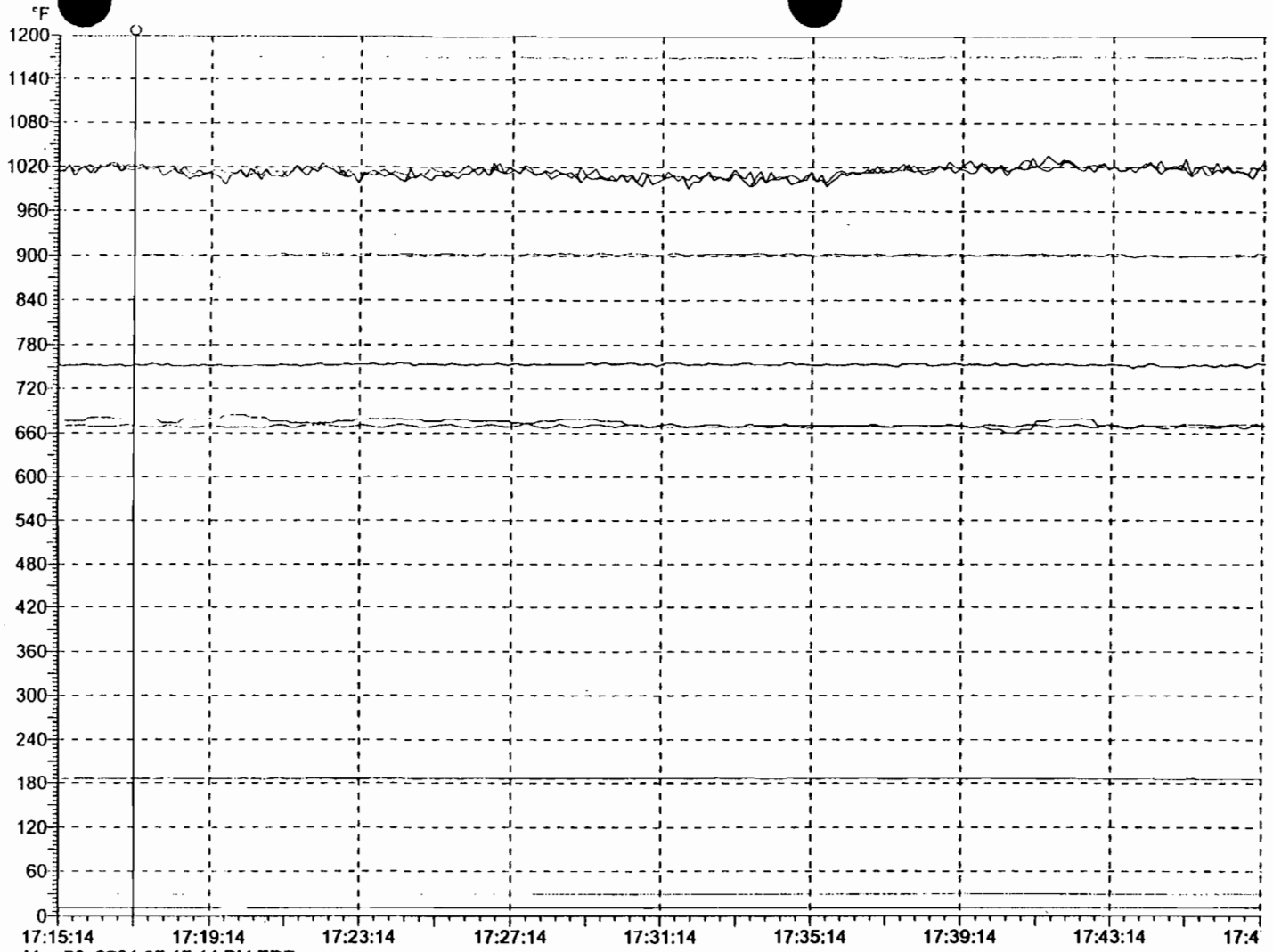
Run 3

Run 1 @ 65% Load									Average
	Time	17:17	17:37	17:57					
Mean Turbine Exhaust Temperature, TTXM		13:12	1171.62	1172.31					1171.83
Fuel Flow, FQG		15.5362	15.5367	15.5395					15.5375
Compressor Inlet Temperature, CTIF1		85.1073	84.61	845.64					338.452
	CTIF2	84.636	84.49	84.62					84.582
	CTIM	84.636	84.49	84.62					84.582
Specific Humidity, CMHUM		0.00981	0.00953	0.00996					0.00977
Inlet Guide Vane Angle, CSGV		55.8444	55.6487	55.6394					55.7108
Generator Output, DWAT		106.832	107.021	106.321					106.725
Compressor Discharge Pressure, CPD		150.041	150.049	149.822					149.971

Run 2									Average
	Time	18:37	18:57						
Mean Turbine Exhaust Temperature, TTXM		1170.46	1170.59						1170.53
Fuel Flow, FQG		15.5791	15.5239						15.5515
Compressor Inlet Temperature, CTIF1		82.5043	82.289						82.3967
	CTIF2	82.0376	81.5256						81.7816
	CTIFM	82.0376	81.5256						81.7816
Specific Humidity, CMHUM		0.01056	0.01071						0.01063
Inlet Guide Vane Angle, CSGV		55.7502	55.6432						55.6967
Generator Output, DWAT		106.681	106.862						106.772
Compressor Discharge Pressure, CPD		150.27	150.021						150.146

Run 3									Average
	Time	19:37	19:57						
Mean Turbine Exhaust Temperature, TTXM		1169.92	1168.53						1169.23
Fuel Flow, FQG		15.5873	15.5208						15.5541
Compressor Inlet Temperature, CTIF1		81.419	80.7						81.0595
	CTIF2	80.756	80.1						80.428
	CTIFM	80.86	80.1						80.48
Specific Humidity, CMHUM		0.01034	0.01016						0.01025
Inlet Guide Vane Angle, CSGV		55.624	55.2795						55.4518
Generator Output, DWAT		106.707	106.583						106.645
Compressor Discharge Pressure, CPD		150.512	150.51						150.511

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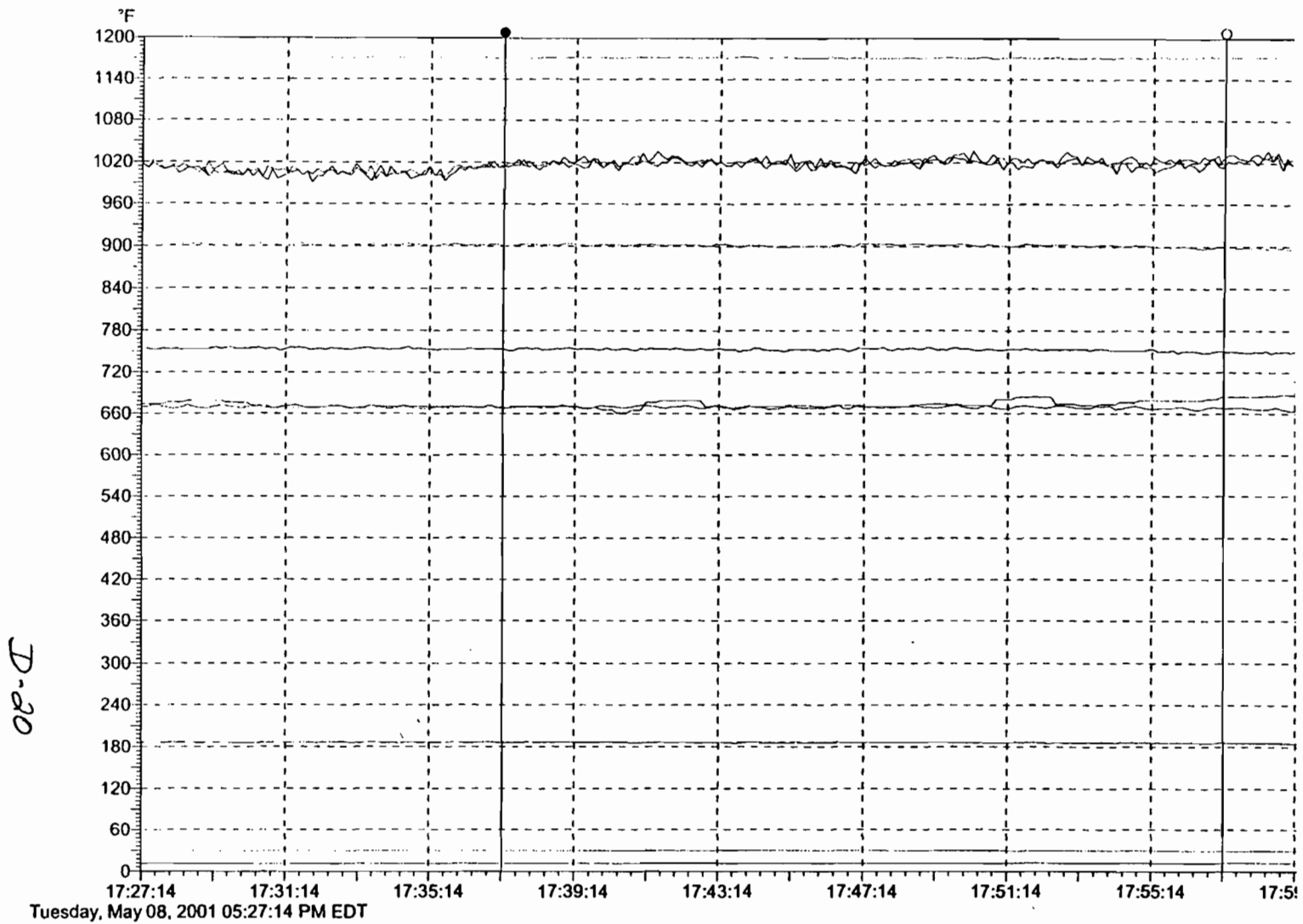


Tuesday, May 08, 2001 05:15:14 PM EDT

Left Cursor 05/08/01 05:17:14 PM.149 - Right Cursor 05/08/01 05:17:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1171.55	1171.55	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	15.5362	15.5362	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	85.1073	85.1073	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	84.6361	84.6361	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	84.6361	84.6361	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.00980934	0.00980934	#H/#A	Specific Humidity
		G8A\DWATT	106.832	106.832	MW	Generator Watts Max Selected
		G8A\cpd	150.041	150.041	psia	Compressor Discharge Press Max Select
		G8A\csgv	55.8444	55.8444	DGA	IGV angle in deg
		G8A\WQ	2.46839	2.46839	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10164e+038	2.10164e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\tdp	56.5696	56.5696	°F	Inlet Dew Point Temperature

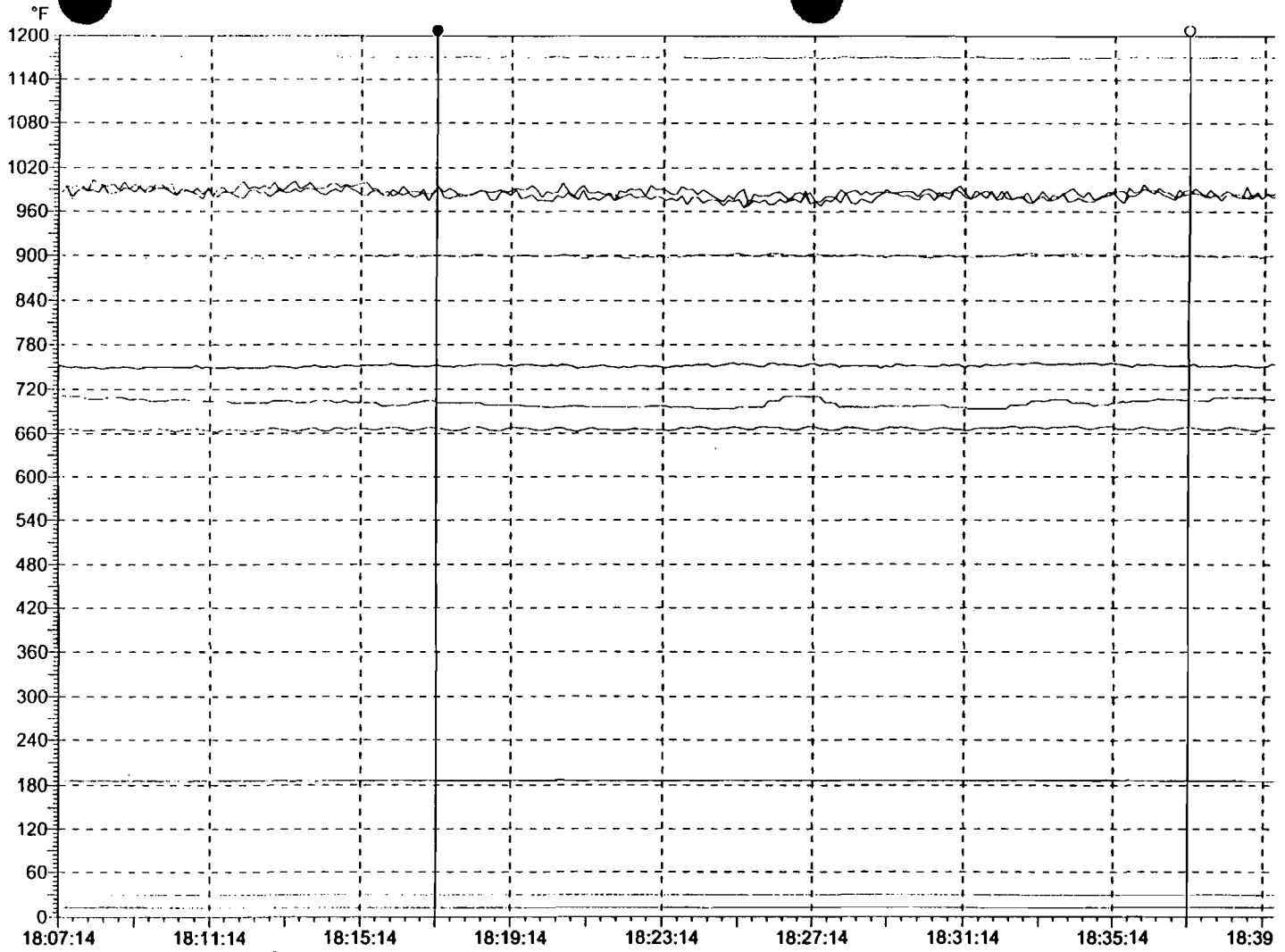
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Run



Tuesday, May 08, 2001 05:27:14 PM EDT

Left Cursor 05/08/01 05:37:14 PM.149 - Right Cursor 05/08/01 05:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1171.62*	1172.31	°F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	15.5367*	15.5395	lb/se	Gas Fuel Flow
		G8AIFQLM1	0*	0	lb/se	Liquid Fuel Mass Flow
		G8Aiclif1a	84.6112*	85.6419	°F	Compressor Inlet Thermocouple 1A
		G8Aiclif1b	84.4938*	84.6284	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	84.4938*	84.6284	°F	Compressor Inlet Temperature
		G8AICMHUM	0.00953068*	0.00995712	#H/#A	Specific Humidity
		G8AIDWATT	107.021*	106.321	MW	Generator Watts Max Selected
		G8Aicpd	150.049*	149.822	psia	Compressor Discharge Press Max Select
		G8Aicsgv	55.6487*	55.6394	DGA	IGV angle in deg
		G8AIWQ	2.46925*	2.47033	lb/se	Water Injection Flow from Feedback
		Q1025FJ	2.10237e+038*	2.10329e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		WXC	0*	0	ratio	Ratio of Required Fuel to NOx Water Flow
		Wtdp	55.7396*	57.0089	°F	Inlet Dew Point Temperature



D-21

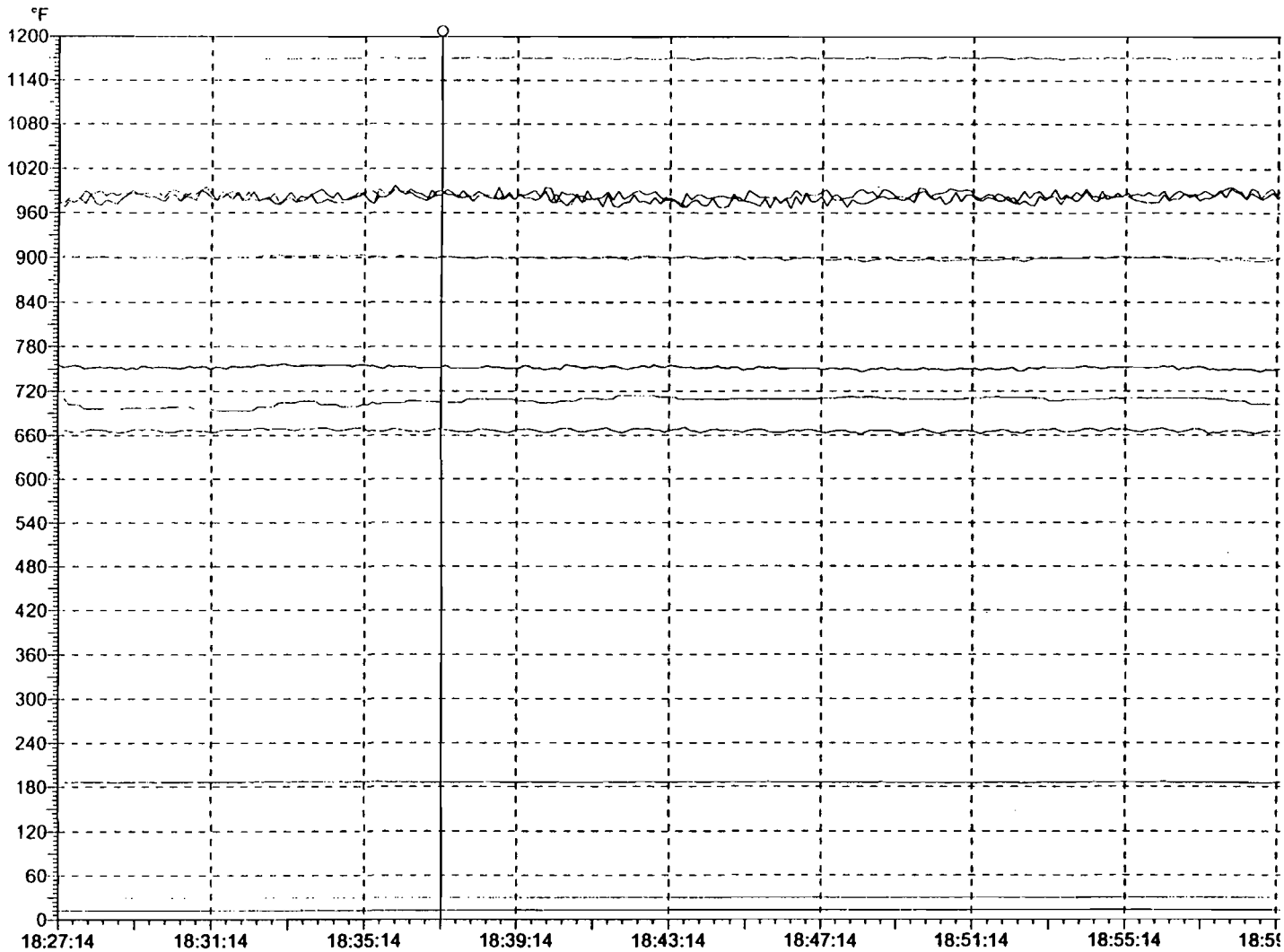
Tuesday, May 08, 2001 06:07:14 PM EDT

Left Cursor 05/08/01 06:17:14 PM.149 - Right Cursor 05/08/01 06:37:14 PM.149 - Difference 1200 seconds

Axes	Pen	Signal Name	Left Value	Right Value Units	Description
<		G8AITTXM	1169.99	1170.46° F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	15.5707	15.5791° lb/se	Gas Fuel Flow
		G8AIFQLM1	0	0° lb/se	Liquid Fuel Mass Flow
		G8Aictif1a	82.5936	82.5043° F	Compressor Inlet Thermocouple 1A
		G8Aictif1b	82.7051	82.0376° F	Compressor Inlet Thermocouple 1B
		G8AICTIM	82.5936	82.0376° F	Compressor Inlet Temperature
		G8AICMHUM	0.0104833	0.0105578° #H/#A	Specific Humidity
		G8AIDWATT	106.847	106.681° MW	Generator Watts Max Selected
		G8Alcpd	150.201	150.27° psia	Compressor Discharge Press Max Select
		G8Alcsgv	55.6372	55.7502° DGA	IGV angle in deg
		G8AIWQ	2.47206	2.47316° lb/se	Water Injection Flow from Feedback
		G8AIWXJ	2.10477e+038	2.1057e+038° ratio	Ratio of Actual Fuel to NOx Water Flow
		G8AIWXC	0	0° ratio	Ratio of Required Fuel to NOx Water Flow
		G8AItdp	58.5551	58.7624° F	Inlet Dew Point Temperature

65
8A
Ru2

D-22

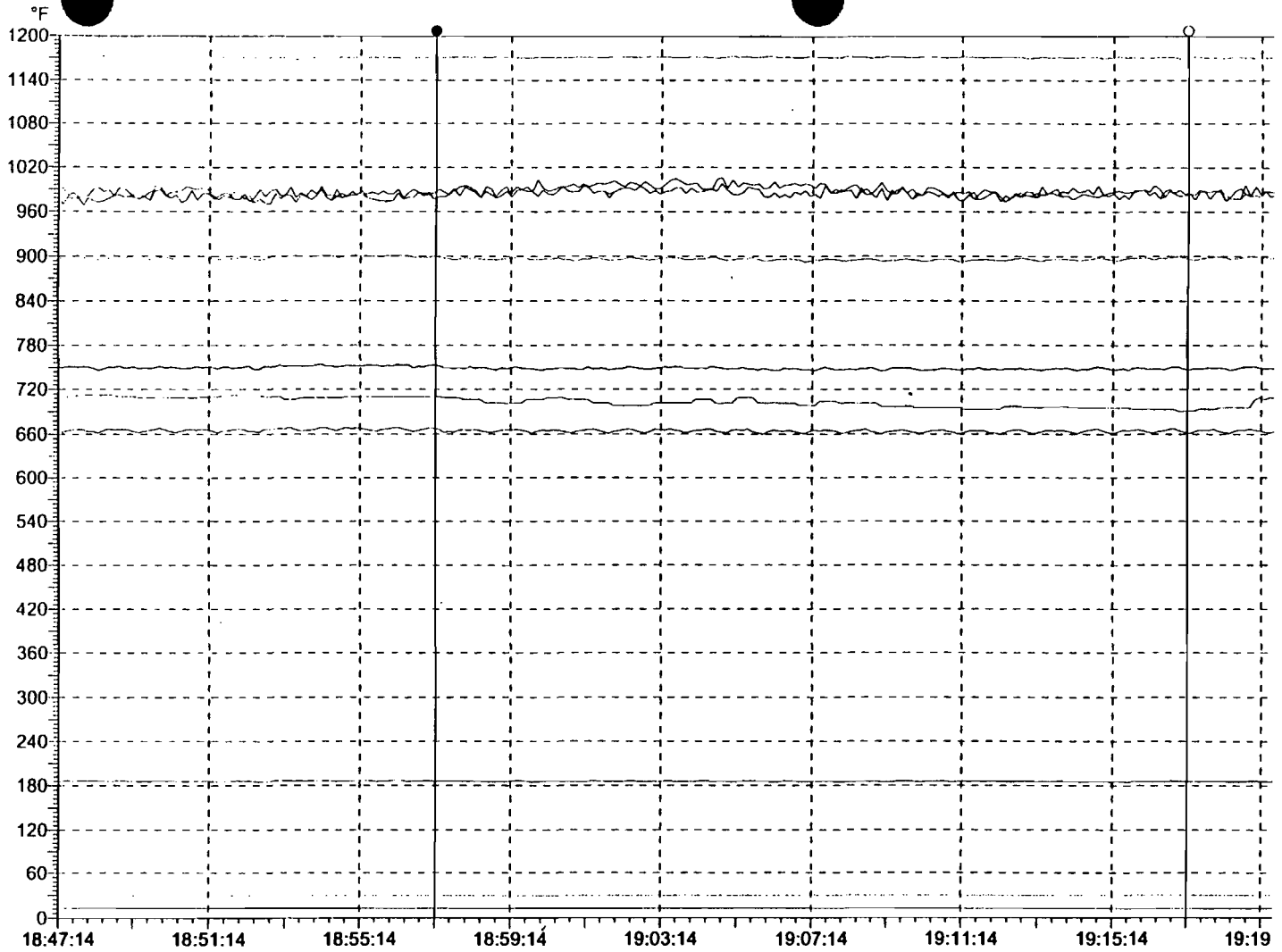


Tuesday, May 08, 2001 06:27:14 PM EDT

Left Cursor 05/08/01 06:37:14 PM.149 - Right Cursor 05/08/01 06:37:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1170.44	1170.44	°F	Exhaust Temp Median Corrected By Average
>		G8A\fgg	15.5776	15.5776	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	82.487	82.487	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	82.0634	82.0634	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	82.0389	82.0389	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0105577	0.0105577	#H/#A	Specific Humidity
		G8A\DWATT	106.703	106.703	MW	Generator Watts Max Selected
		G8A\cpd	150.269	150.269	psia	Compressor Discharge Press Max Select
		G8A\csgv	55.7449	55.7449	DGA	IGV angle in deg
		G8A\WQ	2.47311	2.47311	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10566e+038	2.10566e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	58.7617	58.7617	°F	Inlet Dew Point Temperature

D-23

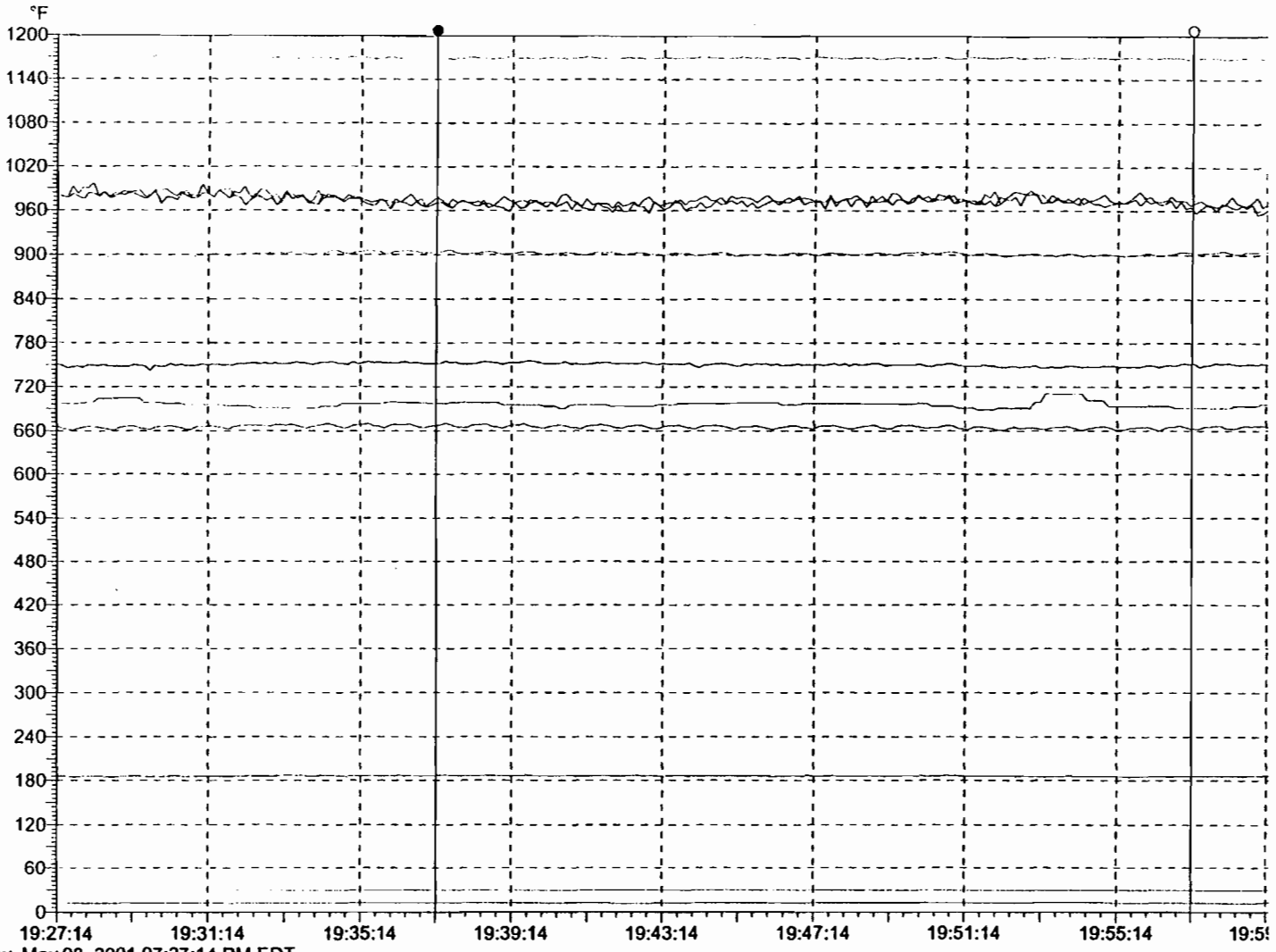


Tuesday, May 08, 2001 06:47:14 PM EDT

Left Cursor 05/08/01 06:57:14 PM.149 - Right Cursor 05/08/01 07:17:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1170.59	1170.48	°F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	15.5239	15.469	lb/se	Gas Fuel Flow
		G8AIfQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8AIfctif1a	82.2891	82.0678	°F	Compressor Inlet Thermocouple 1A
		G8AIfctif1b	81.5256	82.0124	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	81.5256	82.0124	°F	Compressor Inlet Temperature
		G8AICMHUM	0.0107072	0.0101566	#H/#A	Specific Humidity
		G8AIDWATT	106.862	105.594	MW	Generator Watts Max Selected
		G8AIfcpd	150.021	149.454	psia	Compressor Discharge Press Max Select
		G8AIfcsgv	55.6432	55.158	DGA	IGV angle in deg
		G8AIfWQ	2.47317	2.47334	lb/se	Water Injection Flow from Feedback
		G8AIfWXJ	2.10571e+038	2.10586e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8AIfWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8AIfvtdp	59.202	57.596	°F	Inlet Dew Point Temperature

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Tuesday, May 08, 2001 07:27:14 PM EDT

Left Cursor 05/08/01 07:37:14 PM.149 - Right Cursor 05/08/01 07:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1169.92	1168.53	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	15.5873	15.5208	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	81.4192	80.7567	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	80.8614	80.1225	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	80.8614	80.1225	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0103421	0.0101557	#H/#A	Specific Humidity
		G8A\DWATT	106.707	106.583	MW	Generator Watts Max Selected
		G8A\cpd	150.512	150.51	psia	Compressor Discharge Press Max Select
		G8A\csgv	55.624	55.2795	DGA	IGV angle in deg
		G8A\WQ	2.47562	2.47544	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.1078e+038	2.10765e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A\itdp	58.1268	57.5929	°F	Inlet Dew Point Temperature

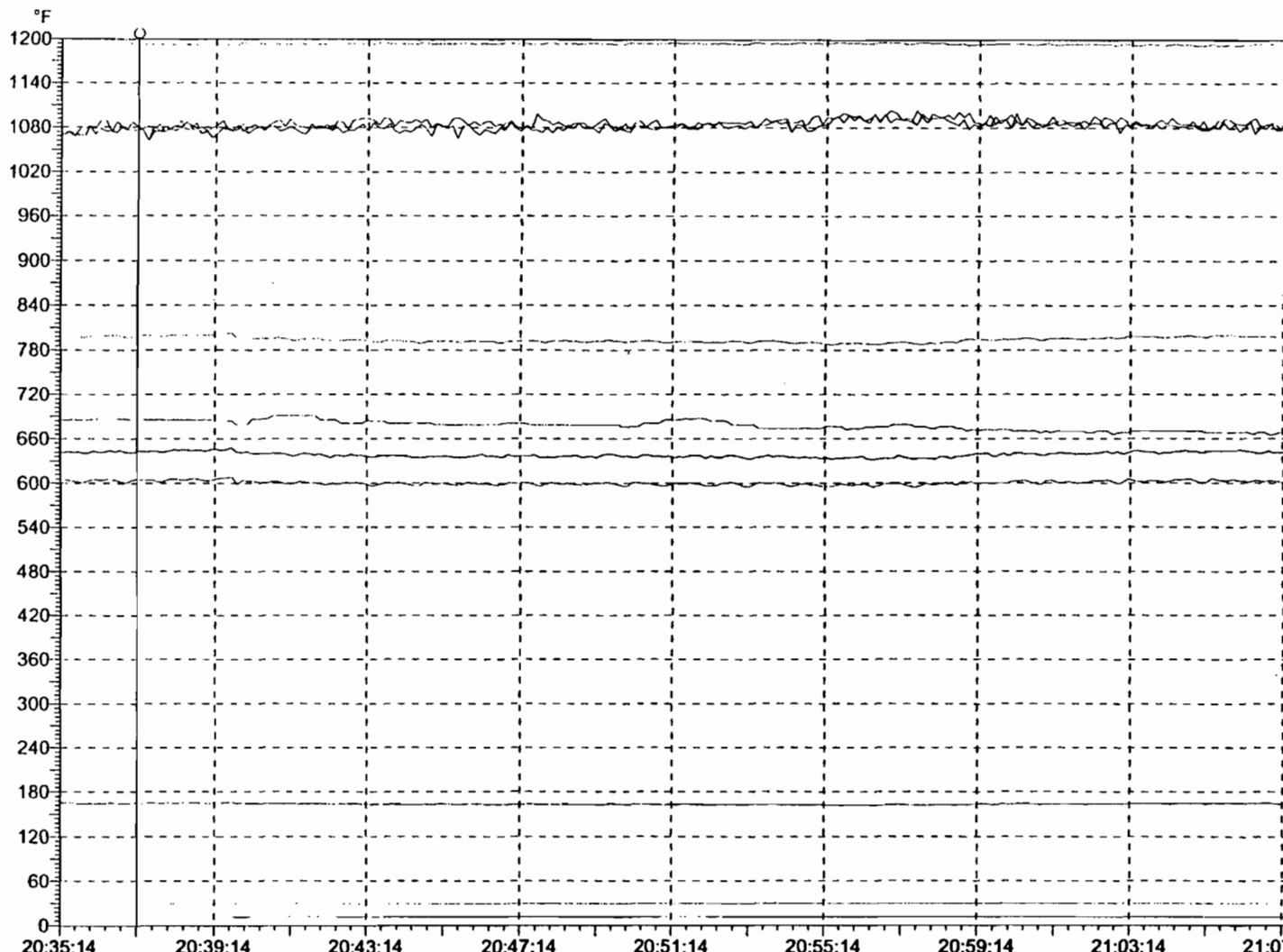
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	00.43	47.00	00.14				00.10
Inlet Guide Vane Angle, CSGV							
Generator Output, DWAT	83.84	82.54	82.63				83.00
Compressor Discharge Pressure, CPD	133.20	131.80	132.66				132.55

Run 2								Average
	Time	21:37	21:57					
Mean Turbine Exhaust Temperature, TTXM		1194.7	1194.3					1194.5
Fuel Flow, FQG		13.617	13.637					13.627
Compressor Inlet Temperature, CTIF1		90.2	89.7					90.0
CTIF2		90.4	89.3					89.8
CTIFM		90.0	88.9					89.5
Specific Humidity, CMHUM		0.00926	0.00911					0.00919
Inlet Guide Vane Angle, CSGV		50.06	49.96					50.01
Generator Output, DWAT		82.17	82.57					82.37
Compressor Discharge Pressure, CPD		132.19	132.14					132.17

Run 3								Average
	Time	22:37	22:49	23:09				
Mean Turbine Exhaust Temperature, TTXM		1195.0	1193.8	1194.7				1194.5
Fuel Flow, FQG		13.622	13.678	13.616				13.639
Compressor Inlet Temperature, CTIF1		91.1	89.4	89.4				89.9
CTIF2		90.2	89.2	90.0				89.8
CTIFM		90.2	89.2	89.3				89.6
Specific Humidity, CMHUM		0.00921	0.00906	0.00911				0.00912
Inlet Guide Vane Angle, CSGV		49.65	50.01	49.64				49.77
Generator Output, DWAT		82.00	82.70	82.20				82.30
Compressor Discharge Pressure, CPD		131.21	131.79	131.28				131.43

D-26

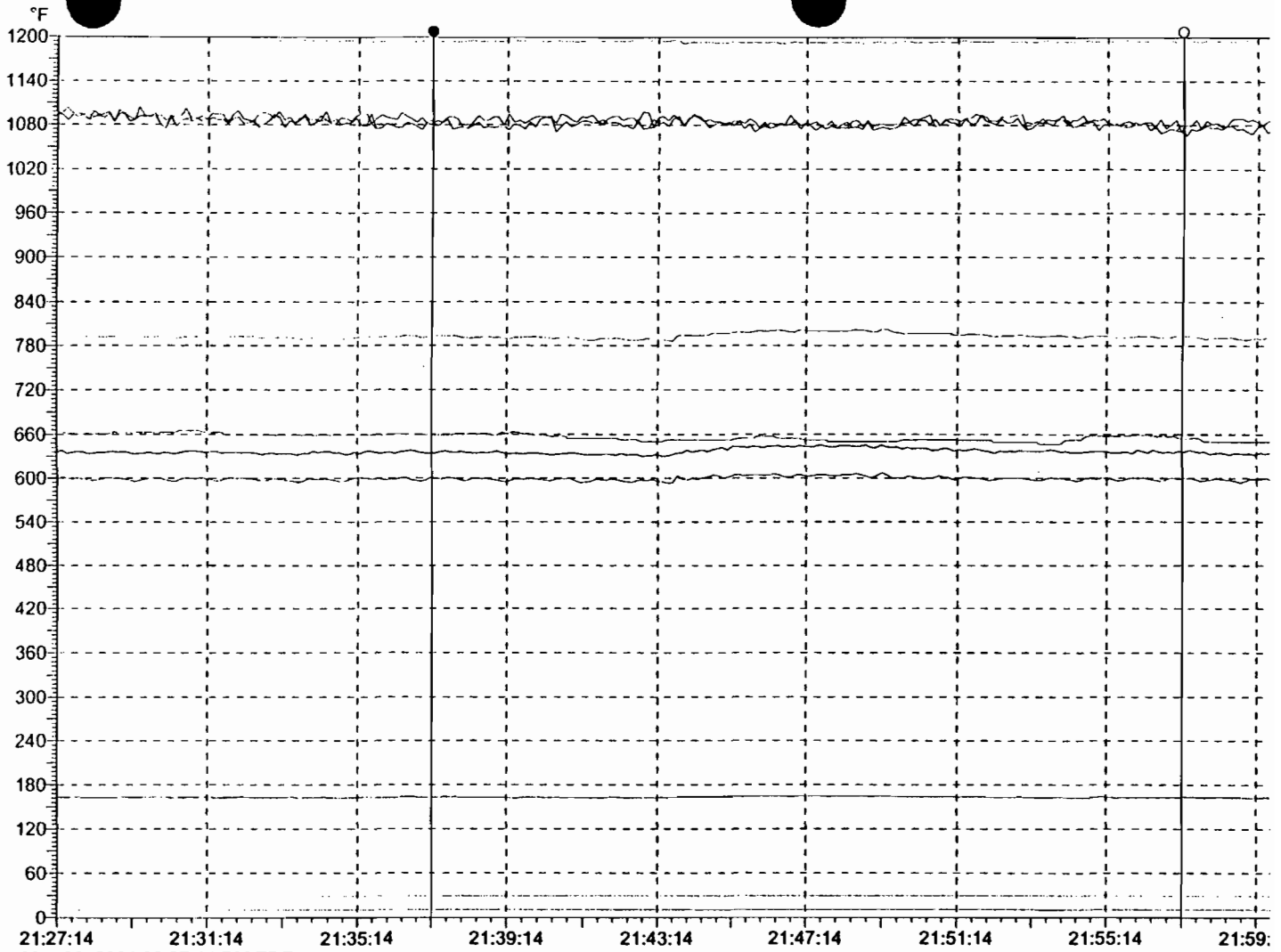


Tuesday, May 08, 2001 08:35:14 PM EDT

Left Cursor 05/08/01 08:37:14 PM.149 - Right Cursor 05/08/01 08:37:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A\TTXM	1193.72	1193.72	°F	Exhaust Temp Median Corrected By Average
>		G8A\fqg	13.7511	13.7511	lb/se	Gas Fuel Flow
		G8A\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A\ctif1a	89.9687	89.9687	°F	Compressor Inlet Thermocouple 1A
		G8A\ctif1b	89.6745	89.6745	°F	Compressor Inlet Thermocouple 1B
		G8A\CTIM	89.6438	89.6438	°F	Compressor Inlet Temperature
		G8A\CMHUM	0.0100042	0.0100042	#H/#A	Specific Humidity
		G8A\DWATT	83.8381	83.8381	MW	Generator Watts Max Selected
		0:1025:fd	133.198	133.198	psia	Compressor Discharge Press Max Select
		G8A\csgv	50.4532	50.4532	DGA	IGV angle in deg
		G8A\WQ	2.4752	2.4752	lb/se	Water Injection Flow from Feedback
		G8A\WXJ	2.10744e+038	2.10744e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		Wtdp	57.1647	57.1647	°F	Inlet Dew Point Temperature

SA
Run



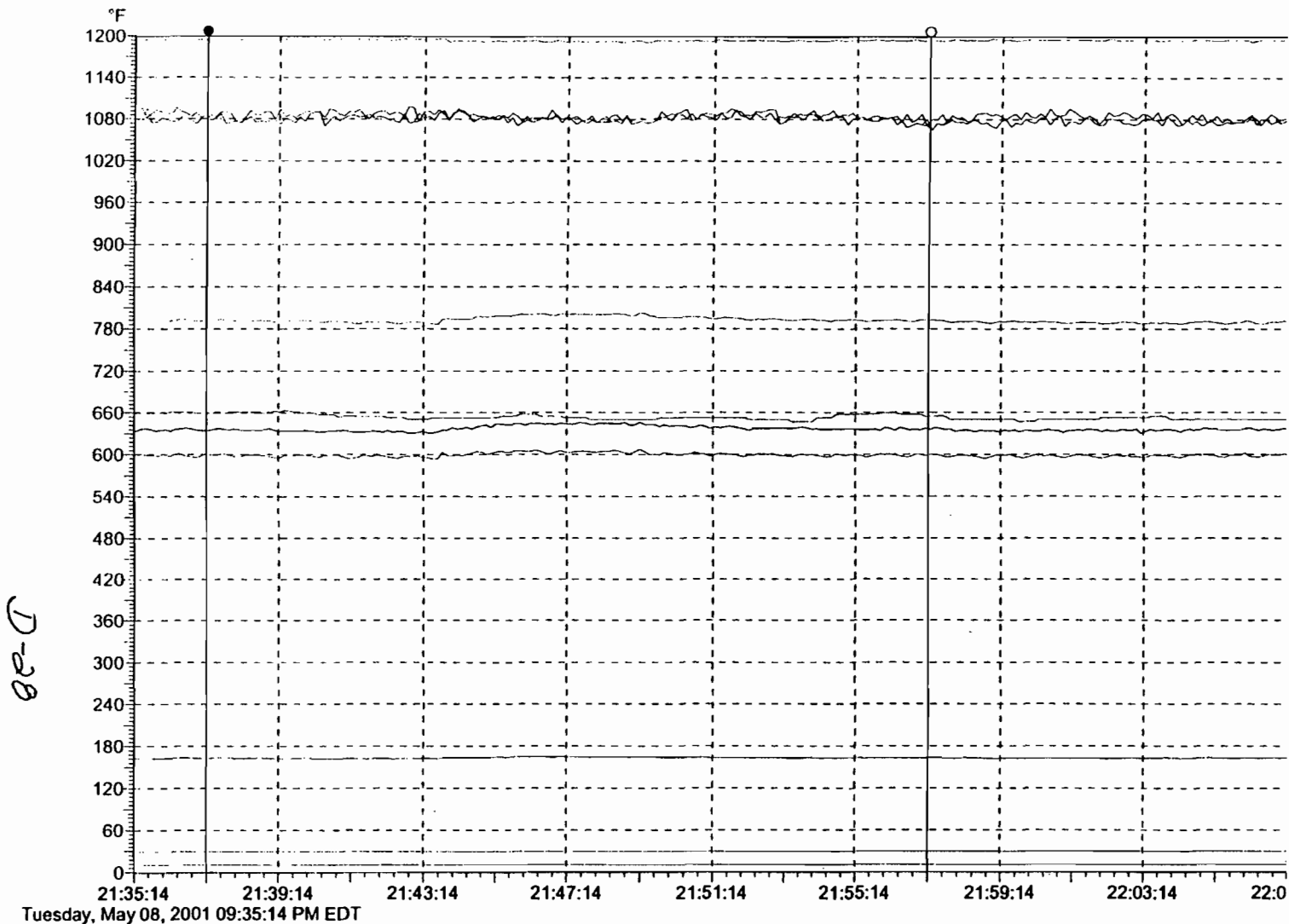
D-27

Tuesday, May 08, 2001 09:27:14 PM EDT

Left Cursor 05/08/01 09:37:14 PM.149 - Right Cursor 05/08/01 09:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8A1TTXM	1194.66	1194.26	°F	Exhaust Temp Median Corrected By Average
>		G8A1fqq	13.6173	13.6374	lb/se	Gas Fuel Flow
		G8A1FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8A1ctif1a	90.1896	89.7134	°F	Compressor Inlet Thermocouple 1A
		G8A1ctif1b	90.3568	89.2626	°F	Compressor Inlet Thermocouple 1B
		G8A1CTIM	90.0188	88.9417	°F	Compressor Inlet Temperature
		G8A1CMHUM	0.0092633	0.00911196	#H/#A	Specific Humidity
		G8A1DWATT	82.1661	82.573	MW	Generator Watts Max Selected
		G8A1cpd	132.192	132.141	psia	Compressor Discharge Press Max Select
		G8A1csgv	50.0614	49.9606	DGA	IGV angle in deg
		G8A1WQ	2.47631	2.47688	lb/se	Water Injection Flow from Feedback
		G8A1WXJ	2.10838e+038	2.10887e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8A1WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8A1itdp	54.9867	54.5484	°F	Inlet Dew Point Temperature

4A 5
Run

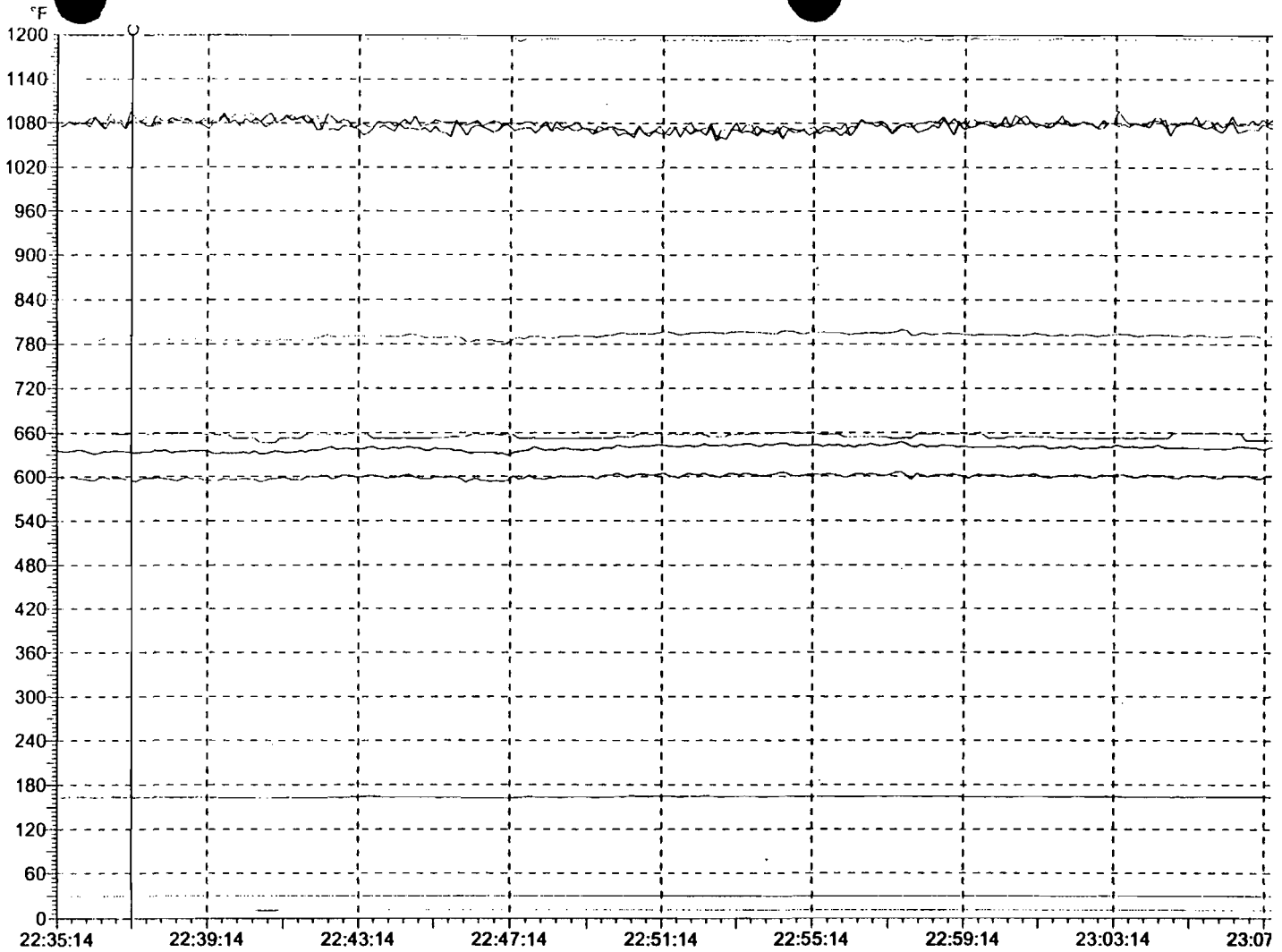


Tuesday, May 08, 2001 09:35:14 PM EDT

Left Cursor 05/08/01 09:37:14 PM.149 - Right Cursor 05/08/01 09:57:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1194.68	1194.28	°F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	13.6178	13.6421	lb/se	Gas Fuel Flow
		G8AIfQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8AIfctif1a	90.1807	89.7388	°F	Compressor Inlet Thermocouple 1A
		G8AIfctif1b	90.373	89.2177	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	90.0249	88.9226	°F	Compressor Inlet Temperature
		G8AICMHUM	0.00926362	0.00911217	#H/#A	Specific Humidity
		G8AIDWATT	82.1656	82.5613	MW	Generator Watts Max Selected
		G8AIfcpd	132.19	132.138	psia	Compressor Discharge Press Max Select
		G8AIfcsgv	50.0641	49.9645	DGA	IGV angle in deg
		G8AIfWQ	2.47627	2.4769	lb/se	Water Injection Flow from Feedback
		G8AIfWXJ	2.10835e+038	2.10889e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8AIfWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8AIfWtdp	54.9877	54.5489	°F	Inlet Dew Point Temperature

D-29

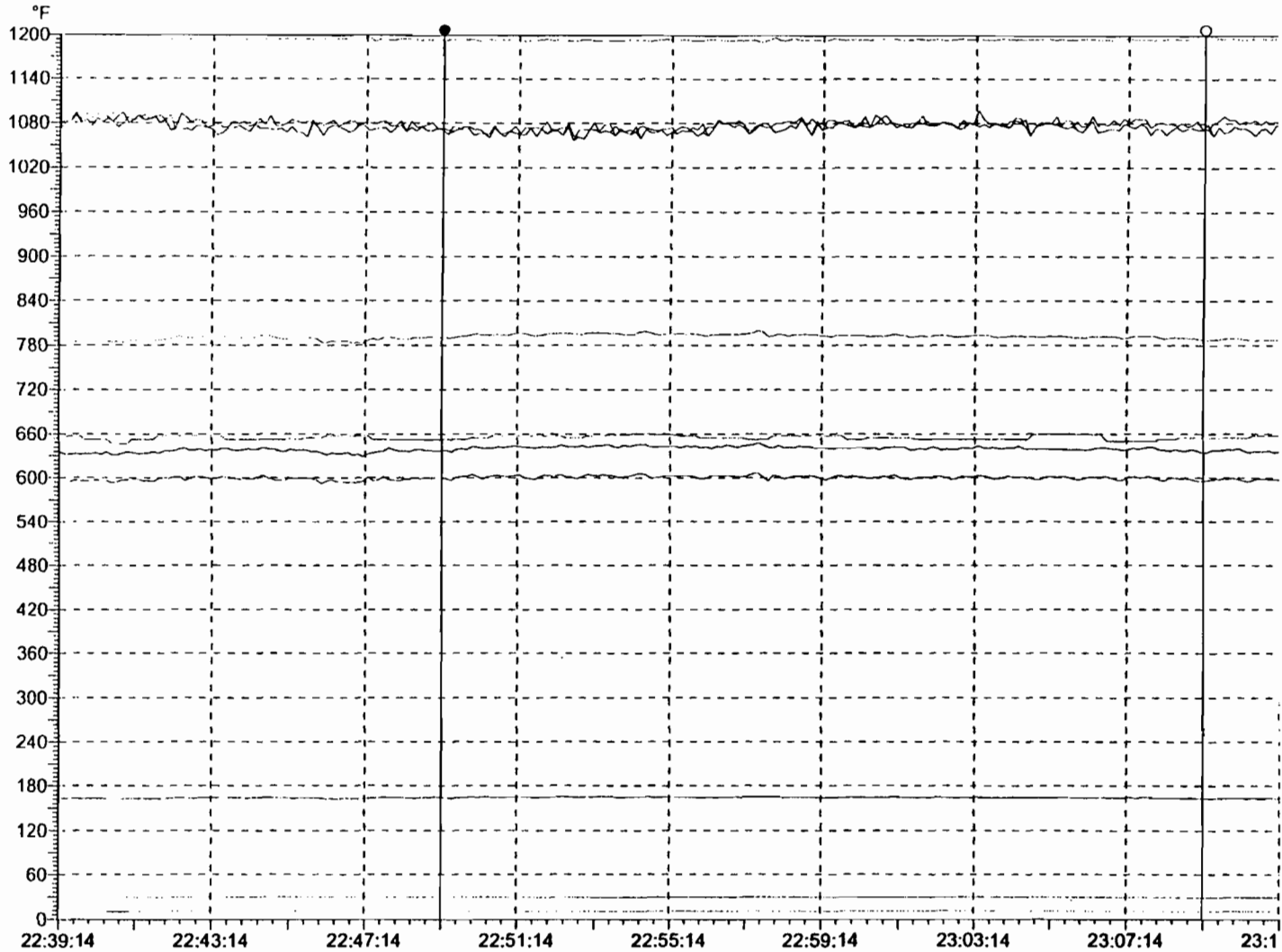


Tuesday, May 08, 2001 10:35:14 PM EDT

Left Cursor 05/08/01 10:37:14 PM.149 - Right Cursor 05/08/01 10:37:14 PM.149 - Difference 0 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1194.98	1194.98	°F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	13.6225	13.6225	lb/se	Gas Fuel Flow
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8Aictif1a	91.0891	91.0891	°F	Compressor Inlet Thermocouple 1A
		G8Aictif1b	90.2348	90.2348	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	90.2348	90.2348	°F	Compressor Inlet Temperature
		G8AICMHUM	0.00920661	0.00920661	#H/#A	Specific Humidity
		G8AIDWATT	82.007	82.007	MW	Generator Watts Max Selected
		G8Aicpd	131.211	131.211	psia	Compressor Discharge Press Max Select
		G8Aicsgv	49.6518	49.6518	DGA	IGV angle in deg
		G8AIWQ	2.47661	2.47661	lb/se	Water Injection Flow from Feedback
		G8AIWXJ	2.10864e+038	2.10864e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		G8Aitdp	54.8357	54.8357	°F	Inlet Dew Point Temperature

D-30



Tuesday, May 08, 2001 10:39:14 PM EDT

Left Cursor 05/08/01 10:49:14 PM.149 - Right Cursor 05/08/01 11:09:14 PM.149 - Difference 1200 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8AITTXM	1193.81	1194.7	°F	Exhaust Temp Median Corrected By Average
>		G8AIfqg	13.6786	13.6164	lb/se	Gas Fuel Flow
		G8AIFQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8Aictif1a	89.3823	89.3694	°F	Compressor Inlet Thermocouple 1A
		G8Aictif1b	89.2327	9001111	°F	Compressor Inlet Thermocouple 1B
		G8AICTIM	89.2327	89.3178	°F	Compressor Inlet Temperature
		G8AICMHUM	0.00905804	0.00910689	#H/#A	Specific Humidity
		G8AIDWATT	82.704	82.1997	MW	Generator Watts Max Selected
		G8Alcpd	131.786	131.279	psia	Compressor Discharge Press Max Select
		G8Alcsgv	50.0107	49.64	DGA	IGV angle in deg
		G8AIWQ	2.47744	2.4773	lb/se	Water Injection Flow from Feedback
		G8AIWXJ	2.10934e+038	2.10923e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		AIWXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow
		Altdp	54.3958	54.5495	°F	Inlet Dew Point Temperature

Appendix E

Unit 8A
AMBIENT DATA

Appendix F

**CALIBRATION GAS CERTIFICATION
SHEETS**

For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISC

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION S

Customer: AIR PRODUCTS 1115 SLIGH BLVD. ORLANDO	Order No: SRP-422291-01 Batch No: 861-68232 PO: Release:	Cylinder No: Bar Code No: Cylinder Pressure: Certification Date: Expiration Date:
FL 32806-		

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENT	
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number
NITRIC OXIDE	85.1 ±1.35 PPM	SG9150613BAL	NTRM 81685X	168.2 PPM	ROSEMOUNT	

NO2 (Reference Value Only): .300 PPM

NITROGEN Balance Gas

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Suzanne Hauter

SUZANNE HAUTER

Approved By: _____

[Signature]

(16921)

For Technical Information Call
1-800-752-1597

P

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISO CE

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STAND.

Customer:
AIR PRODUCTS AND CHEMICALS, INC.
4322 INDUSTRY LANE
UDI BUSINESS PARK
DURHAM NC 27709

Order No: CSS-535898-01
Batch No: 861-73132
PO:
Release:

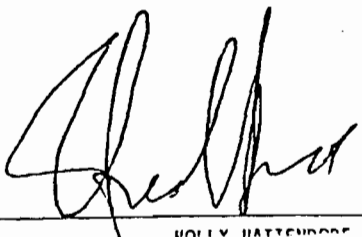
Cylinder No: S
Bar Code No: F
Cylinder Pressure*: 2
Certification Date: 0
Expiration Date: 0

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENT		
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration
CARBON DIOXIDE	18.6±0.08 %	SG9168969BAL	NTRM	19.73 %	Horiba VIA-510	51135063	08/16

NITROGEN Balance Gas

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:



HOLLY HUTCHINSON

Approved By:



For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISC

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION

Customer:
AIR PRODUCTS
1115 SLIGH BLVD.
ORLANDO

FL 32806-

Order No: SRP-083621-04
Batch No: 861-51609
PO:
Release:

Cylinder No:
Bar Code No:
Cylinder Pressure:
Certification Date:
Expiration Date:

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENT	
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number
METHANE	89.9 ±.43 PPM	SG9152505BAL	GMIS	101.0 PPM	Gow-Mac 750	59405U

7.
3

AIR Balance Gas
Oxygen Concentration 21.1 %

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Richard Van Dyke
Richard Van Dyke

Approved By:

James L.

(16921)

For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

IS

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GA

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION

Customer:
AIR PRODUCTS AND CHEMICALS
LEHIGH DISTRICT
ROUTE 222
TREXLERTOWN PA 18087-

Order No: SRP-535211-02
Batch No: 861-73570
PO:
Release:

Cylinder No:
Bar Code No:
Cylinder Pressure:
Certification Date:
Expiration Date:

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL	
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number
OXYGEN	20.9±0.09 %	SG9159552BAL	NTRM	23.85 %	SERVOMEX 1100	2974C
NITROGEN	Balance Gas					

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

E-4

Analyst:

Abbasi Husain

(16921)

Approved By:

For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. • 12722 S. Wentworth Avenue, Chicago, IL 60628

ISC

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS

Customer:

APCI
2710 BROADWAY
CAMDEN

HJ 00104-

Order No: 239-069404-00

Batch No: 861-73147

PO:

Release:

Cylinder No:

Serial No:

Cylinder Pressure

Certification Date

Expiration Date:

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INFORMATION	
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Volume	Serial Number
METHANE	25.1±0.30 PPM	SG9127329BAL	GMIS	25.1 PPM	150	1090

AIR balance Gas
Oxygen Concentration 20.9 %

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

F-5

Analyst:

Richard Valpyke

Richard Valpyke

Approved By:

J. Amos

(16921)

COMPLIANCE CLASS

Dual-Analyzed Calibration Standard



Scott Specialty Gases

2600 CAJON BLVD., SAN BERNARDINO, CA 92411

Phone: 909-827-2571

Fax: 909-827-0549

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
2600 CAJON BLVD.
SAN BERNARDINO, CA 92411

P.O. No.: 81228
Project No.: 02-95707-001

Customer

ENERGY & ENV RESEARCH
8001 IRVINE BLVD
IRVINE CA 92618

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; September, 1997.

Cylinder Number: AAL8470 Certification Date: 4/13/00 Exp. Date: 10/12/2000
Cylinder Pressure: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL	TRACEABILITY
	14.5	PPM	ACCURACY**	NIST and NMI
NITROGEN DIOXIDE			+/- 2%	
NITROGEN		BALANCE		

Do not use when cylinder pressure is below 150 psig.

Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

FORM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
660	7/01/00	ALM049002	101.8 PPM	NITROGEN DIOXIDE

IDENTIFICATION

IDENTIFICATION NUMBER/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
AR/38144250	03/21/00	CHEMI-LUMINESCENT

BY: [Signature]

F-6

G-23

P.3

For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. • 12722 S. Wentworth Avenue, Chicago, IL 60628

CERTIFICATE OF ANALYSIS: EPA PROTOCOL

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBR

Customer:
AIR PRODUCTS AND CHEMICALS, INC.
4022 INDUSTRY LANE
UDI BUSINESS PARK
DURHAM NC 27709

Order No: CSS-535898-01
Batch No: 861-73132
PO:
Release:

Cylinder No
Bar Code No
Cylinder Pr
Certificati
Expiration

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTIC	
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number
CARBON DIOXIDE	10.5±0.00 X	609168969DAL	NTRM	19.73 %	Horiba VIA-510	51135063
NITROGEN Balance Gas						

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

6-7

Da

Nov 07 00 11:23a

Analyst: _____

HOLLY MATTENDORF

Approved By: _____

(16921)

GAS DIVIDER CERTIFICATION RESULTS

Reference: EPA 205
 Location: Ft. Myers Fla.
 Unit: 2D GE Turbine

GAS TYPE	% O2	RESPONSE 1	RESPONSE 2	RESPONSE 3	AVERAGE RESPONSE	DEVIATION A
UZAM Nitrogen	0.00	0.00	0.01	0.01	0.01	0
O2, Protocol I (bypass divider)	2.00	2.01	2.00	2.00	2.00	0
O2, Protocol I	20.10	20.10	20.10	20.10	20.10	0
Divided	12.00	12.05	12.03	12.12	12.07	0
Divided	9.00	9.05	9.07	9.05	9.06	0
Divided	5.50	5.49	5.48	5.46	5.48	-0
Divided	2.00	2.00	2.00	2.00	2.00	0

Deviation A = (Average Response/Desired Concentration)*100%

Deviation B = (Max deviation/Desired Concentration)*100%

F8

P 1

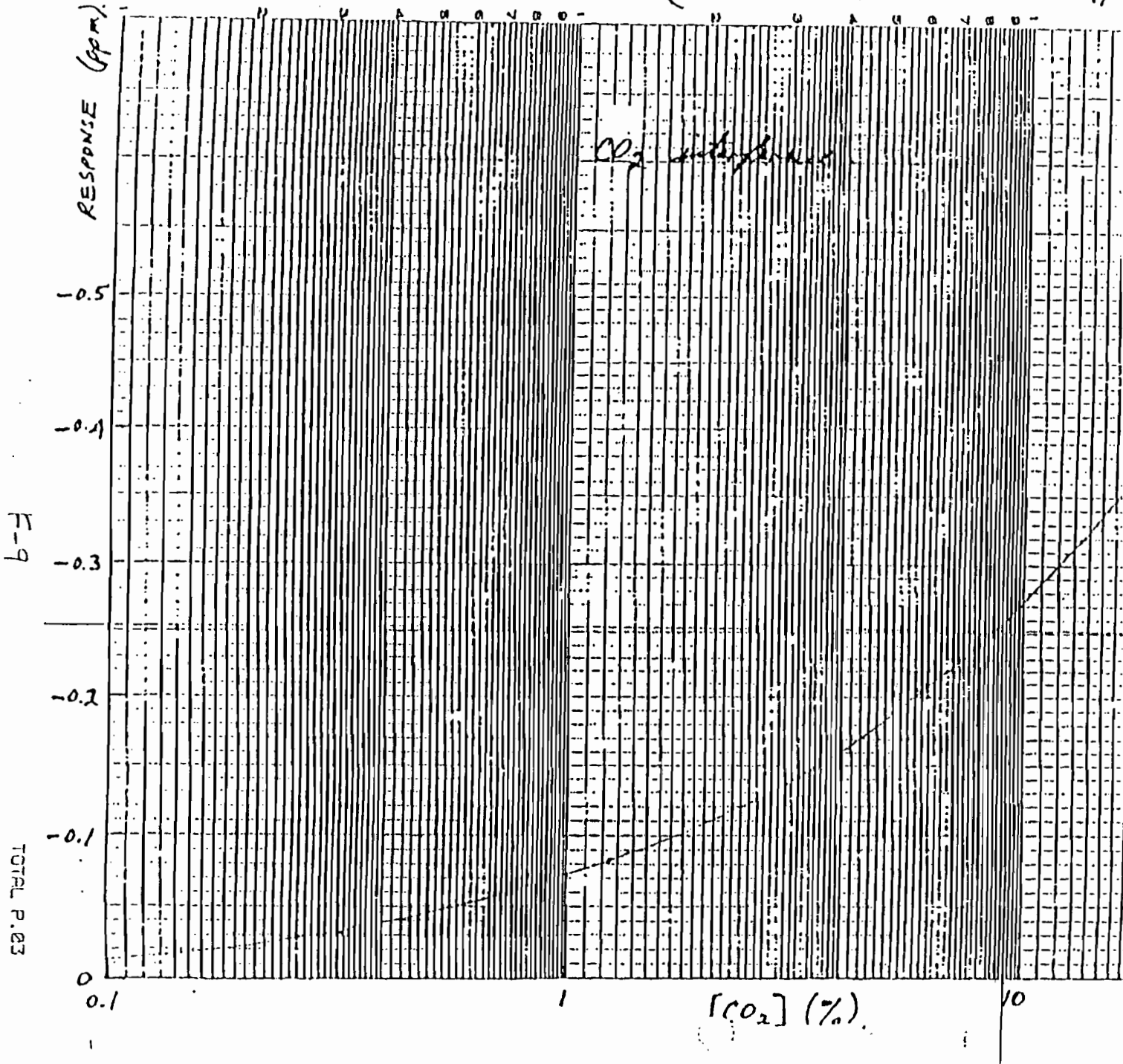
BEST AVAILABLE COPY

NO. 340-1310 DIETZEN GRAPH
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER IN.

DIETZEN CORPORATION
MADE IN U.S.A.

MODEL 48 (Baseline unit)

11



INTERFERENCE RESPONSE TEST

DATE OF TEST JANUARY 18, 1980

ANALYZER TYPE 10A/R Range 0 - 2.5 PPM

SERIAL NO. 10 A/R - 014B-01

<u>TEST GAS TYPE</u>	<u>CONCENTRATION PPM</u>	<u>ANALYZER OUTPUT RESPONSE</u>
<u>CO</u>	<u>500</u>	<u>< .1 PPM</u>
<u>SO₂</u>	<u>201</u>	<u>< .1 PPM</u>
<u>CO₂</u>	<u>10%</u>	<u>< .1 PPM</u>
<u>O₂</u>	<u>20.9 %</u>	<u>< .1 PPM</u>

F-10

GAS DIVIDER CERTIFICATION RESULTS

Reference: EPA 205
 Location: Martin Station
 Unit: 8A GE Turbine
 5-May-01

F-11

GAS TYPE	% O2	RESPONSE 1	RESPONSE 2	RESPONSE 3	AVERAGE RESPONSE	DEVIATION A (%)
UZAM Nitrogen	0.00	0.00	0.00	-0.01	0.00	n/a
O2, Protocol I (bypass divider)	2.00	2.01	2.02	2.00	2.01	0.5
O2, Protocol I	21.00	21.00	21.00	21.00	21.00	0.0
Divided	12.00	12.06	12.07	12.08	12.07	0.5
Divided	9.00	9.00	9.00	9.02	9.01	0.0
Divided	5.50	5.53	5.50	5.51	5.51	0.2
Divided	2.00	2.02	2.01	2.01	2.01	0.6

Deviation A = (Average Response/Desired Concentration)*100%

Deviation B = (Max deviation/Desired Concentration)*100%

GE-Energy & Environmental Research

Method 205 Calibration

15 sec Averaged data

For 5-05-2001 @ 11:23:32.42

O2 TIME

Percent HH:MM:SS

0.03 00:11:23:32.000

0.02 00:11:23:47.000

0 Zero

-0.01 00:11:24:17.000

-0.01 00:11:24:32.000

0.01 00:11:24:47.000

0.01 00:11:25:02.000

-0.02 00:11:25:17.000

10.98 00:11:25:32.004

20.76 00:11:25:47.004

20.85 00:11:26:02.004

20.87 00:11:26:17.004

20.98 00:11:26:32.004

21 00:11:26:47.004

21.01 00:11:27:02.004

21 21%

21 00:11:27:32.004

20.97 00:11:27:47.004

11.1 00:11:28:02.004

1.97 00:11:28:17.004

2.02 00:11:28:32.004

2.01 2.00%

2.02 00:11:29:02.004

2.01 00:11:29:17.004

1.67 00:11:29:32.004

0.05 00:11:29:47.004

0 Zero

0.01 00:11:30:17.004

0 00:11:30:32.004

0 00:11:30:47.004

0 00:11:31:02.004

0 00:11:31:17.004

-0.01 00:11:31:32.004

0 00:11:31:47.004

0 00:11:32:02.004

1.09 00:11:32:17.004

19.54 00:11:32:32.004

20.78 00:11:32:47.004

20.79 00:11:33:02.004

20.79 00:11:33:17.004

20.84 00:11:33:32.004

21 21%

21 00:11:34:02.004

21 00:11:34:17.004
21.01 00:11:34:32.004
21 00:11:34:47.004
21 00:11:35:02.004
21 00:11:35:17.004
21.01 00:11:35:32.004
21 00:11:35:47.004
21 00:11:36:02.004
21.01 00:11:36:17.004
21 00:11:36:32.004
21 00:11:36:47.004
17.77 00:11:37:02.004
2.37 00:11:37:17.004
2.03 00:11:37:32.004
2.02 00:11:37:47.004
2.01 00:11:38:02.004
 2.00%
2.02 00:11:38:32.004
2.02 00:11:38:47.004
0.19 00:11:39:02.004
-0.01 00:11:39:17.004
-0.01 00:11:39:32.004
 Zero
-0.01 00:11:40:02.004
-0.01 00:11:40:17.004
-0.02 00:11:40:32.004
-0.01 00:11:40:47.004
0.68 00:11:41:02.004
19.49 00:11:41:17.004
20.98 00:11:41:32.004
20.98 00:11:41:47.004
20.99 00:11:42:02.004
 21%
19.41 00:11:42:32.004
2.72 00:11:42:47.004
2.02 00:11:43:02.004
2.01 00:11:43:17.004
2.01 00:11:43:32.004
 2.00%
2.01 00:11:44:02.004
0.16 00:11:44:17.004
-0.02 00:11:44:32.004
0.01 00:11:44:47.004
 Zero
0.68 00:11:45:17.004
11.41 00:11:45:32.004
 12.00%
12.06 00:11:46:02.004
12.05 00:11:46:17.004

12.06 00:11:46:32.004
12 00:11:46:47.004
10.22 00:11:47:02.004
9 00:11:47:17.004
9.01 00:11:47:32.004
 9.00%
8.99 00:11:48:02.004
9 00:11:48:17.004
8.94 00:11:48:32.004
8.26 00:11:48:47.004
5.71 00:11:49:02.004
5.55 00:11:49:17.004
5.53 00:11:49:32.004
 5.50%
5.52 00:11:50:02.004
3.95 00:11:50:17.004
2.04 00:11:50:32.004
2.02 00:11:50:47.004
 2.00%
2.01 00:11:51:17.004
2.01 00:11:51:32.004
4.79 00:11:51:47.004
11.83 00:11:52:02.004
11.98 00:11:52:17.004
12.07 00:11:52:32.004
12.08 00:11:52:47.004
 12.00%
12.07 00:11:53:17.004
12.07 00:11:53:32.004
12 00:11:53:47.004
10.84 00:11:54:02.004
9.04 00:11:54:17.004
9.03 00:11:54:32.004
9.01 00:11:54:47.004
 9.00%
6.94 00:11:55:17.004
5.46 00:11:55:32.004
5.5 00:11:55:47.004
5.5 00:11:56:02.004
 5.50%
5.5 00:11:56:32.004
5.51 00:11:56:47.004
5.46 00:11:57:02.004
2.96 00:11:57:17.004
2.01 00:11:57:32.004
2.01 00:11:57:47.004
2.01 00:11:58:02.004
2.01 00:11:58:17.004
2.01 00:11:58:32.004

9.4 00:11:58:47.004
12.08 00:11:59:02.004
 12.00%
12.08 00:11:59:32.004
12.07 00:11:59:47.004
12.08 00:12:00:02.004
11.96 00:12:00:17.004
9.16 00:12:00:32.004
9.02 00:12:00:47.004
 9.00%
9.01 00:12:01:17.004
8.96 00:12:01:32.004
6.76 00:12:01:47.004
5.44 00:12:02:02.004
5.51 00:12:02:17.004
 5.50%
5.5 00:12:02:47.004
5.51 00:12:03:02.004
5.5 00:12:03:17.004
5.49 00:12:03:32.004
4.33 00:12:03:47.004
2.07 00:12:04:02.004
2.04 00:12:04:17.004
2.01 00:12:04:32.004
2.01 00:12:04:47.004
 2.00%
2.01 00:12:05:17.004
2.01 00:12:05:32.004

SCAQMD METHOD 100.1 -- CEMS NO2-to-NO Converter Efficiency Test

Project: GE/FPL	NOx Analyzer Information		E
Plant: Martin Station	ID/Serial No.:	42C66380-352	
Unit: Unit 8A	Make/Model:	TECO moly	

Calibration Gas Data

Type	Protocol	NOx Conc. (ppmv)	Balance	NO2 Value (Symbol)	Expire Date	Cylinder
NO2 (15-18)	+/- 2%	15.4	N2	15.4 (co)	5/15/01	ALM
NOx (span, 17-19)	+/- 2%	18.00 (a)	N2	0.08 (b) =NOx-NO	3/20/02	cc
N2 (zero)	UZAMZ				n/a	

Pretest Calibration Data (Direct)

Time	Analyzer Mode	Gas Type	Cal-Gas Value (ppmv)	Instrument Response (ppmv)	Calibration Error (Span)	
					(ppmv)	(%)
14:02	NO-mode	N2 (zero)	0.00	-0.02	-0.02	-0.02
14:09	NO-mode	NO (span)	17.92	17.96	0.04	0.04
14:02	NOx-mode	N2 (zero)	0.00	0.00	0.00	0.00
14:09	NOx-mode	NO (span)	18.00	18.02	0.02	0.02

NO2-to-NO Converter Efficiency Test Data (Direct)

Time	Analyzer Mode	Gas Type	Symbol	Analyzer Response (ppmv)	
14:14	NO-mode	NO2	C1	0.04	D1=C1
14:14	NOx-mode	NO2	C2	15.380	D2=C2

NOx Conversion Efficiency Calculations and Acceptability

a: % CE = (D2/D1) * 100=	99.87%	PASS	FAIL, (% CE must be greater than 95%)
b: D3 = C1 - C2 =	15.34	PASS	FAIL, (D3 must be less than 1.0 ppmv)

CEMS NOx CE Data Form... 7/10/97

(a) _____
 (a) _____
 (a) Undivided NOx
 (b) Divided NOx/Undivided NOx*100

F-16

GE-Energy & Environmental Research

NOx Converter Test

15 sec Averaged data

For 5-05-2001 @ 14:00:37.91

NO2 ppmv	NOx ppmv	NO ppm	TIME HH:MM:SS
0.09	0.09	-0.02	00:14:00:37.004
0.25	0.25	-0.02	00:14:00:52.004
0.17	0.18	-0.02	00:14:01:07.004
0.02	0.02	-0.01	00:14:01:22.004
-0.01	0	-0.02	00:14:01:37.004
-0.02	-0.01	-0.02	00:14:01:52.004
-0.02	-0.01	-0.01	00:14:02:07.004
-0.01	0	-0.02	Zero
0	0.02	-0.02	00:14:02:37.004
-0.02	-0.01	-0.01	00:14:02:52.004
-0.02	-0.01	-0.02	00:14:03:07.004
-0.01	0	-0.02	00:14:03:22.004
-0.02	-0.01	-0.02	00:14:03:37.004
0.05	0.06	-0.02	00:14:03:52.004
0.65	0.69	0.02	00:14:04:07.004
2.39	2.63	0.22	00:14:04:22.004
3.83	4.62	0.77	00:14:04:37.004
2.44	3.31	0.83	00:14:04:52.004
1.56	1.73	0.14	00:14:05:07.004
1.98	2.82	0.81	00:14:05:22.004
0.17	6.85	8.48	00:14:05:37.004
-0.34	14.14	16.29	00:14:05:52.004
0.02	17.58	17.55	00:14:06:07.004
-0.09	17.65	17.72	00:14:06:22.004
-0.07	17.7	17.76	00:14:06:37.004
-0.07	17.74	17.78	00:14:06:52.004
-0.07	17.75	17.79	00:14:07:07.004
-0.07	17.78	17.84	00:14:07:22.004
-0.07	17.9	17.95	00:14:07:37.004
0	17.97	17.95	00:14:07:52.004
0.06	18.01	17.93	00:14:08:07.004
0.05	18.04	17.95	00:14:08:22.004
0.06	18.04	17.95	00:14:08:37.004
0.04	18.02	17.96	NO/NOx
2.14	18.31	16.15	00:14:09:07.004
9.31	17.08	7.74	00:14:09:22.004
10.68	13.24	2.53	00:14:09:37.004
12.87	13.69	0.79	00:14:09:52.004
14.1	14.39	0.26	00:14:10:07.004
14.32	14.5	0.15	00:14:10:22.004
14.38	14.53	0.14	00:14:10:37.004
14.41	14.56	0.12	00:14:10:52.004
14.43	14.56	0.11	00:14:11:07.004

14.43	14.57	0.11 00:14:11:22.004
15.31	15.29	0.11 00:14:11:37.004
15.31	15.37	0.11 00:14:11:52.004
15.31	15.38	0.07 00:14:12:07.004
15.31	15.38	0.07 00:14:12:22.004
15.31	15.38	0.07 00:14:12:37.004
15.31	15.38	0.07 00:14:12:52.004
15.31	15.38	0.07 00:14:13:07.004
15.31	15.38	0.07 00:14:13:22.004
15.31	15.37	0.07 00:14:13:37.004
15.31	15.38	0.07 00:14:13:52.004
15.31	15.37	0.07 00:14:14:07.004
15.31	15.38	0.07 00:14:14:22.004
15.31	15.38	0.07 NO2/NOx
15.31	15.38	0.07 00:14:14:52.004
15.31	15.38	0.07 00:14:15:07.004
15.31	15.38	0.07 00:14:15:22.004
15.31	15.38	0.07 00:14:15:37.004

Appendix G

NATURAL GAS ANALYSIS REPORT



8210 Mosley Rd.
Houston, TX 77075
713 943-9776 Telephone
713 943-3846 Facsimile

CORE LABORATORIES

MICHAEL O WHITE
GE/EER
1001 AVIATION PARKWAY
STE 100
MORRISVILLE, NC 27560

Sample Number: 112350-001
Sample Date: 5/7/01 4:00:00 PM
Date Reported: 5/23/01
Date Received: 5/15/01
Sample ID: Unit 8A Turbine Inlet (Day 1 # 1)
Description: Natural Gas
#1672

Analytical Report

Test	Result	Units	Method	Date	Analyst
Sulfur, Total in Gas by Micro.	3	ppm wt	ASTM D-3246	5/16/01	SG
Ultimate Analysis					
Oxygen	< 0.001	Mol %	GPA 2261-95	5/22/01	TH
Nitrogen	0.44	Mol %	GPA 2261-95		
Carbon Dioxide	0.72	Mol %	GPA 2261-95		
Methane	94.65	Mol %	GPA 2261-95		
Ethane	2.93	Mol %	GPA 2261-95		
Propane	0.61	Mol %	GPA 2261-95		
Isobutane	0.13	Mol %	GPA 2261-95		
n-Butane	0.14	Mol %	GPA 2261-95		
Isopentane	0.04	Mol %	GPA 2261-95		
n-Pentane	0.03	Mol %	GPA 2261-95		
Hexanes Plus	0.31	Mol %	GPA 2261-95		
Total	100.00	Mol %	GPA 2261-95		
Molar Mass Ratio	0.59620		GPA 2172-96		
Relative Density	0.59715		GPA 2172-96		
Compressibility Factor	0.99772		GPA 2172-96		
Gross Heating Value (Dry)	1050.5	BTU/CF (Ideal)	GPA 2172-96		
Gross Heating Value (Dry)	1052.9	BTU/CF (Real)	GPA 2172-96		
Net Heating Value	947.6	BTU/CF (Ideal)	GPA 2172-96		
Net Heating Value	949.7	BTU/CF (Real)	GPA 2172-96		
Pressure Base	14.696	psia			
Carbon	74.06	Wt %			
Hydrogen	23.89	Wt %			
Oxygen	1.33	Wt %			
Nitrogen	0.71	Wt %			
Sulfur	< 0.01	Wt %			

The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. The analytical results, opinions or interpretations expressed represent the best judgment of Core Laboratories. Core Laboratories, however, makes no warranty or representation, express or implied, of any type, and expressly disclaims same as to the productivity, proper operations or profitability of any oil, gas, coal, or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. This report shall not be reproduced, in whole or in part, without the written approval of Core Laboratories.



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Houston, TX 77075
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713 943-3846 Facsimile

CORE LABORATORIES

MICHAEL O WHITE
GE/EER
1001 AVIATION PARKWAY
STE 100
MORRISVILLE, NC 27560

Sample Number: 112350-001
Sample Date: 5/7/01 4:00:00 PM
Date Reported: 5/23/01
Date Received: 5/15/01
Sample ID: Unit 8A Turbine Inlet (Day 1 # 1)
Description: Natural Gas
#1672

Analytical Report

Test	Result	Units	Method	Date	Analyst
------	--------	-------	--------	------	---------

Approved By: _____

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Laboratory Report Due by _____ to:

Energy and Environmental Research Corporation

EER Contact: _____ Address: Mike White
 tel: (919) 460-1060
 fax: ()

18 Mason, Irvine, CA 92718
 tel: (714) 859-8851
 fax: (714) 859-3194

Sample Chain of Custody Record

EER Project No: <u>2623-110</u>		Sampling System Prepared by: <u>John Maxwell</u>				Analyses Required <i>Total Samples</i> <i>16/16</i>
Project Name: <u>AE / FP&L</u>		Test Operator(s): <u>John Maxwell</u>				
Site Name: <u>Martin Station</u>		Samples Recovered by:				
Laboratory I.D. No.	EER Label No.	FIELD SAMPLE IDENTIFICATION AND SAMPLING INFORMATION				No. of Containers
		Test ID / Location	Physical Description	Date	Time	
<u>1672</u>		<u>8A turbine inlet</u>	<u>Natural gas</u>	<u>5-7-01</u>	<u>1600</u>	<u>1</u> ✓ ✓
<u>1599</u>		<u>8A turbine inlet</u>		<u>5-7-01</u>	<u>1605</u>	<u>1</u> Archive
<u>1577</u>		<u>11</u>	<u>11</u>	<u>5-8-01</u>	<u>1400</u>	<u>1</u> ✓ ✓
<u>1610</u>		<u>11</u>	<u>11</u>	<u>5-8-01</u>	<u>1405</u>	<u>1</u> Archive
Method of Shipment: <u>Fed Exp</u>		Remarks (RUSH!, units: mg/L, ppm, etc.):		Relinquished by: (Sign & Print) <u>John Maxwell</u>		Date / Time: <u>5/14/01 12:00 P.</u>
Shipment I.D.:		Date Shipped: <u>5-14-01</u>				
Samples Shipped to: <u>Core Labs</u>						
Attention:		After analysis: <input type="checkbox"/> Archive samples (Hold for _____ months, then dispose.)				
		<input type="checkbox"/> Return samples to: EER Corporation 8001 Irvine Blvd., Irvine, CA 92705				

E-3



8210 Mosley Rd.
Houston, TX 77075
713 943-9776 Telephone
713 943-3846 Facsimile

CORE LABORATORIES

MICHAEL O WHITE
GE/EER
1001 AVIATION PARKWAY
STE 100
MORRISVILLE, NC 27560

Sample Number: 112693-001
Sample Date: 5/23/01 6:30:00 PM
Date Reported: 6/13/01
Date Received: 6/7/01
Sample ID: 210781 Natural Gas# 760
Description: Unit 8B Inlet

Analytical Report

Test	Result	Units	Method	Date	Analyst
Sulfur, Total in Gas by Micro.	5	ppm wt	ASTM D-3246	6/8/01	SG
Ultimate Analysis					
Oxygen	0.01	Mol %	GPA 2261-95	6/12/01	TH
Nitrogen	0.43	Mol %	GPA 2261-95		
Carbon Dioxide	0.66	Mol %	GPA 2261-95		
Methane	93.65	Mol %	GPA 2261-95		
Ethane	2.98	Mol %	GPA 2261-95		
Propane	0.64	Mol %	GPA 2261-95		
Isobutane	0.14	Mol %	GPA 2261-95		
n-Butane	0.13	Mol %	GPA 2261-95		
Isopentane	0.04	Mol %	GPA 2261-95		
n-Pentane	0.03	Mol %	GPA 2261-95		
Hexanes Plus	1.29	Mol %	GPA 2261-95		
Total	100.00	Mol %	GPA 2261-95		
Molar Mass Ratio	0.62192		GPA 2172-96		
Relative Density	0.62306		GPA 2172-96		
Compressibility Factor	0.99749		GPA 2172-96		
Gross Heating Value (Dry)	1091.8	BTU/CF (Ideal)	GPA 2172-96		
Gross Heating Value (Dry)	1094.5	BTU/CF (Real)	GPA 2172-96		
Net Heating Value	986.0	BTU/CF (Ideal)	GPA 2172-96		
Net Heating Value	988.5	BTU/CF (Real)	GPA 2172-96		
Pressure Base	14.696	psia			
Carbon	74.61	Wt %			
Hydrogen	23.53	Wt %			
Oxygen	1.19	Wt %			
Nitrogen	0.67	Wt %			
Sulfur	< 0.01	Wt %			

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 Houston, TX 77075
 713 943-9776 Telephone
 713 943-3846 Facsimile

CORE LABORATORIES

MICHAEL O WHITE
 GE/EER
 1001 AVIATION PARKWAY
 STE 100
 MORRISVILLE, NC 27560

Sample Number: 112693-001
 Sample Date: 5/23/01 6:30:00 PM
 Date Reported: 6/13/01
 Date Received: 6/7/01
 Sample ID: 210781 Natural Gas# 760
 Description: Unit 8B Inlet

Analytical Report

Test	Result	Units	Method	Date	Analyst
------	--------	-------	--------	------	---------

Approved By: _____

Jean Waits
 Jean Waits
 Supervising Chemist

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**Energy and
Environmental
Research Corporation**

18 Mason, Irvine, CA 92718
tel: (714) 859-8851
fax: (714) 859-3194

Laboratory Report Due by _____ to:

EER Contact: Mike White Address: 1001 Aviation Parkway
tel: (919) 460-1060 Suite 100
fax: (919) 460-1944 Morrisville, NC 27560

Sample Chain of Custody Record

EER Project No: <u>7623</u>		Sampling System Prepared by: <u>J. Maxwell</u>				Analyses Required <u>Sulfur</u> <u>U.H.</u>		
Project Name: <u>FP&L Martin Station</u>		Test Operator(s): <u>J. Maxwell</u>						
Site Name: <u>Unit BB</u>		Samples Recovered by: <u>J. Maxwell</u>						
Laboratory I.D. No.	EER Label No.	FIELD SAMPLE IDENTIFICATION AND SAMPLING INFORMATION				No. of Containers		
		Test ID / Location	Physical Description	Date	Time			
	<u>2107B1</u>	<u>760</u>	<u>Natural Gas</u>	<u>05/23/01</u>	<u>18:30</u>	<u>1</u>		
Method of Shipment: <u>Fed Ex</u>		Remarks (RUSH!, units: mg/L, ppm, etc.):		Relinquished by: (Sign & Print) <u>John Maxwell</u>		Date / Time: <u>6-5-01</u>	Rec <u>A</u>	
Shipment I.D.: <u>821273922684</u>				Date Shipped: <u>6-5-01</u>		Date / Time: <u>19:30</u>		
Samples Shipped to: <u>Core Labs</u>								
Attention:		<input type="checkbox"/> Archive samples (Hold for _____ months, then dispose.) <input checked="" type="checkbox"/> Return samples to: EER Corporation 8001 Irvine Blvd., Irvine, CA 92705 <u>1001 Aviation Parkway</u> <u>Morrisville, NC 27560</u>						

Appendix H

EXAMPLE CALCULATIONS

EXAMPLE CALCULATIONS - AIR PERMIT REPORT

Site FP&L Ft. Myers
 Unit 8A
 Date 5/7/01
 Description Run 1 - 100% Load

Input Data

%H	23.89
%C	74.06
%S	0.01
%N	0.71
%O	1.33
GCV, BTU/ft ³	1052.9
Relative Density of fuel	0.59715
Oxygen in Stack, %	13.68
Carbon Dioxide in Stack, %	4.17
density of air @ 60 F, std press.	0.0764
Fuel Flow, lb/sec	21.32

provided by Core Laboratories
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 provided by Core Laboratories
 provided by Core Laboratories
 provided by Core Laboratories
 provided by Core Laboratories

A-1

GHV in BTU/lb (GHV in BTU/cubic ft) / (density of air) x relative density of fuel

$$1052.9 / 0.0764 \times 0.5971$$

GHV in BTU/lb 23,079

Oxygen Based F Factor (F_d)

F-Factors are calculated using equations in EPA Reference Method 19.

$$\frac{(3.64 \times \%H) + (1.53 \times \%C) + (0.57 \times \%S) + (0.14 \times \%N) - 0.46 \times \%O}{\text{GHV in BTU/lb}}$$

3.64	23.89	1.53	74.06	0.57	0.01	0.14	0.71
23079							

Oxygen Based F Factor (F_d) 8656 scf/MMBtu

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Gas Flow Rate, dscfm F_d

Volumetric flow rate is calculated using Method 19 equations, fuel flow rate

$$F_d \text{ in scf/MMBtu} \times \text{GHV in Btu/lb} \times \text{fuel feed rate, lb/sec} \times 60 \text{ seconds/minute} \times \frac{1}{1000000 \times (20.9 - \text{measured stack O}_2, \%)}$$

Run 1 @ 100% load

$$\frac{8656}{1000000} \times \frac{23079}{(20.9 - 13.68)} \times 21.32 \times 60 \times 20.9 = \frac{5.3E+12}{7220000}$$

dscfm

739,831

Carbon Dioxide Based F Factor (F_c)

$$\frac{0.321 \times \% \text{Carbon in fuel} \times 1,000,000}{\text{GCV, BTU/lb}}$$

$$\frac{0.321 \times 74.06 \times 1000000}{23,079} = \frac{2.4E+07}{23079}$$

Carbon Dioxide Based F Factor (F_c)

1030.1

A-2

Gas Flow Rate, dscfm F_c

$$F_c \text{ in scf/MMBtu} \times \text{GHV in Btu/lb} \times \text{fuel feed rate, lb/sec} \times 60 \text{ seconds/minute} \times \frac{1}{1000000 \times \text{measured stack CO}_2, \%}$$

Run 1 @ 100% load

$$\frac{1030}{1000000} \times \frac{23079}{4.17} \times 21.32 \times 60 \times 100 = \frac{3.0E+12}{4170000}$$

dscfm

729,386

NO_x Conc. adjusted to 15% O₂

Concentration of measured NO_x is adjusted to 15 percent oxygen

Run 1 NO _x , ppmvd	9.45	NO _x measured	x	$\frac{(20.9 - 15)}{(20.9 - 13.68)}$
Run 1 O ₂ , percent	13.68			
		9.45	x	$\frac{5.9}{7.22}$
Run 1 NO _x , ppmvd @ 15% O ₂	7.72			

Mass Emission Rate, lb/hr

To determine the total mass emitted on a pound per hour basis.

(Concentration, ppm) x (mass flow rate, dscfm) x (0.0000001194) x (60

9.45 x 739,831 x 1.19E-07 x 60
constant from Method 19

NO_x Emission Rate, lb/hr 50.09

H-3

Sulfur Calculations

To determine the sulfur dioxide emission rate based on sulfur in fuel

$\frac{(3600) \times (\text{sulfur in fuel, ppm by wt}) \times (\text{fuel flow, lb per sec})}{1000000} \times \frac{n}{n}$

Analytical results from Core Labs, ppm
3

$\frac{3600 \times 3 \times 21.32}{1000000} \times \frac{64.06}{32.06}$

$\frac{230291.1}{1000000} \times \frac{64.06}{32.06}$

Emission Rate of SO₂, lb/hr 0.460

SO₂ Concentration, ppm Vd

$$\frac{(\text{SO}_2 \text{ ER, lb/hr}) \times (385.6 \text{ lb/lb-mole}) \times 10^6}{(60 \text{ min/hr}) \times (\text{stack flow, dscf/min}) \times (\text{MW SO}_2 \text{ lb/lb-mole})}$$

$$\frac{0.460 \times 385.6 \times 1000000}{60 \times 739,831 \times 64.06}$$

SO₂ Concentration, ppm Vd

0.062

SO₂ Conc. adjusted to 15% O₂

Concentration of measured SO₂ is adjusted to 15 percent oxygen

SO₂, ppmvd

0.062

SO₂ measured x

$$\frac{(20.9 - 15)}{(20.9 - 13.68)}$$

Run 1 O₂, percent

13.68

$$(20.9 - 13.68)$$

0.062 x

$$\frac{5.9}{7.22}$$

SO₂, ppmvd @ 15% O₂

0.051

SO₂, percent @ 15% O₂

0.0000051

74

To determine the grains of sulfur per dscf natural gas based on sulfur in fuel

Analytical results from Core Labs, ppm
3

1 ppm by wt. Sulfur in natural gas = 0.033 grains/100 dscf

$$3 \text{ ppm} \times \frac{0.033 \text{ grains}}{100 \text{ dscf}} = \frac{0.099}{100}$$

Grains Sulfur / standard cubic foot of fuel

0.00099

**Florida Power & Light
Indiantown, FL**

**SAMPLE CALCULATIONS FOR
PARTICULATE TEST (EPA METHOD 5)**

Unit 8A Stack

Test Date: 5/7/01

Test Number: 1

1. Volume of dry gas sampled at standard conditions (68 deg F, 29.92 in. Hg), dscf.

$$Vm(std) = \frac{17.64 \times Y \times Vm \times \left(Pb + \frac{\text{delt H}}{13.6} \right)}{(Tm + 460)}$$

$$Vm(std) = \frac{17.64 \times 1.0079 \times 111.701 \times \left(30.05 + \frac{1.299}{13.6} \right)}{82.0 + 460} = 110.449$$

Where:

- $Vm(std)$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dscf.
- Vm = Volume of gas sample measured by the dry gas meter at meter conditions, dcf.
- Pb = Barometric Pressure, in Hg.
- delt H = Average pressure drop across the orifice meter, in H₂O.
- Tm = Average dry gas meter temperature, deg F.
- Y = Dry gas meter calibration factor.
- 17.64 = Factor that includes ratio of standard temperature (528 deg R) to standard pressure (29.92 in. Hg), deg R/in. Hg.
- 13.6 = Specific gravity of mercury.

2. Volume of water vapor in the gas sample corrected to standard conditions, scf.

$$Vw(std) = (0.04707 \times Vwc) + (0.04715 \times Wwsg)$$

$$Vw(std) = (0.04707 \times 180.2) + (0.04715 \times 23.9) = 9.61$$

Where:

$Vw(std)$ = Volume of water vapor in the gas sample corrected to standard conditions, scf.

Vwc = Volume of liquid condensed in impingers, ml.

$Wwsg$ = Weight of water vapor collected in silica gel, g.

0.04707 = Factor which includes the density of water (0.002201 lb/ml), the molecular weight of water (18.0 lb/lb-mole), the ideal gas constant 21.85 (in. Hg) (ft³/lb-mole)(deg R); absolute temperature at standard conditions (528 deg R), absolute pressure at standard conditions (29.92 in. Hg), ft³/ml.

0.04715 = Factor which includes the molecular weight of water (18.0 lb/lb-mole), the ideal gas constant 21.85 (in. Hg) (ft³/lb-mole)(deg R); absolute temperature at standard conditions (528 deg R), absolute pressure at standard conditions (29.92 in. Hg), and 453.6 g/lb, ft³/g.

3. Moisture content

$$Bws = \frac{Vw(std)}{Vw(std) + Vm(std)}$$

$$Bws = \frac{9.61}{9.61 + 110.449} = 0.080$$

Where:

Bws = Proportion of water vapor, by volume, in the gas stream, dimensionless.

4. Mole fraction of dry gas.

$$M_d = 1 - B_{ws}$$

$$M_d = 1 - 0.080 = 0.920$$

Where:

$$M_d = \text{Mole fraction of dry gas, dimensionless.}$$

5. Dry molecular weight of gas stream, lb/lb-mole.

$$MW_d = (0.440 \times \% \text{CO}_2) + (0.320 \times \% \text{O}_2) + (0.280 \times (\% \text{N}_2 + \% \text{CO}))$$

$$\begin{aligned} MW_d &= (0.440 \times 4.20) + (0.320 \times 13.60) + (0.280 \times (82.20 + 0.00)) \\ &= 29.22 \end{aligned}$$

Where:

$$MW_d = \text{Dry molecular weight, lb/lb-mole.}$$

$$\% \text{CO}_2 = \text{Percent carbon dioxide by volume, dry basis.}$$

$$\% \text{O}_2 = \text{Percent oxygen by volume, dry basis.}$$

$$\% \text{N}_2 = \text{Percent nitrogen by volume, dry basis.}$$

$$\% \text{CO} = \text{Percent carbon monoxide by volume, dry basis.}$$

$$0.440 = \text{Molecular weight of carbon dioxide, divided by 100.}$$

$$0.320 = \text{Molecular weight of oxygen, divided by 100.}$$

$$0.280 = \text{Molecular weight of nitrogen or carbon monoxide, divided by 100.}$$

6. Actual molecular weight of gas stream (wet basis), lb/lb-mole.

$$M_{ws} = (MW_d \times M_d) + (18 \times (1 - M_d))$$

$$M_{ws} = (29.22 \times 0.920) + 18(1 - 0.920) = 28.32$$

Where:

MWs = Molecular weight of wet gas, lb/lb-mole.

18 = Molecular weight of water, lb/lb-mole.

7. Average velocity of gas stream at actual conditions, ft/sec.

$$V_s = 85.49 \times C_p \times ((\Delta p)^{1/2})_{avg} \times \left(\frac{T_s (avg)}{P_s \times MW_s} \right)^{1/2}$$

$$V_s = 85.49 \times 0.84 \times 0.97512 \times \left(\frac{1564}{30.05 \times 28.32} \right)^{1/2} = 94.92$$

Where:

V_s = Average gas stream velocity, ft/sec.

$$85.49 = \text{Pitot tube constant, ft/sec} \times \frac{(\text{lb/lb-mole})(\text{in. Hg})^{1/2}}{(\text{deg R})(\text{in H}_2\text{O})}$$

C_p = Pitot tube coefficient, dimensionless.

T_s = Absolute gas stream temperature, deg R = T_s , deg F + 460.

$$P_s = \text{Absolute gas stack pressure, in. Hg.} = P_b + \frac{P(\text{static})}{13.6}$$

Δp = Velocity head of stack, in. H₂O.

8. Isokinetic variation calculated from intermediate values, percent.

$$I = \frac{17.327 \times T_s \times V_m(\text{std})}{V_s \times O \times P_s \times M_d \times (D_n)^2}$$

$$I = \frac{17.327 \times 1564 \times 110.449}{94.92 \times 180 \times 30.05 \times 0.920 \times (0.248)^2} = 103.01$$

Where:

A-8

- I = Percent of isokinetic sampling.
- O = Total sampling time, minutes.
- Dn = Diameter of nozzle, inches.
- 17.327 = Factor which includes standard temperature (528 deg R), standard pressure (29.92 in. Hg), the formula for calculating area of circle ($\pi \times D^2$)/4, conversion of square feet to square inches (144), conversion of seconds to minutes (60), and conversion to percent (100),

$$\frac{(\text{in. Hg})(\text{in}^2)(\text{min})}{(\text{deg R})(\text{ft}^2)(\text{sec})}$$

9. Particulate Concentration, mg/dscf.

$$C1 = \frac{Mt}{Vm(\text{std})}$$

$$C1 = \frac{3.8}{110.449}$$

$$C1 = 0.0344$$

Where:

C1 = Particulate concentration, mg/dscf

Mt = Total weight of particulate caught by train

10. Particulate mass emission rate, lbs/hr.

$$PMRt = C1 \times Qs(\text{std}) \times 60 / (453.59 \times 1000)$$

$$Qs(\text{std}) = 739,830 \text{ dscfm from Method 19 calculations}$$

$$PMRt = 3.37 \text{ lb/hr}$$

Where:

PMRt = Particulate mass emission rate, lbs/hr.

0.00013228 = Conversion factor relating milligrams to pounds (453,590) and minutes to hours.

Appendix I

SAMPLE LOCATION SCHEMATICS

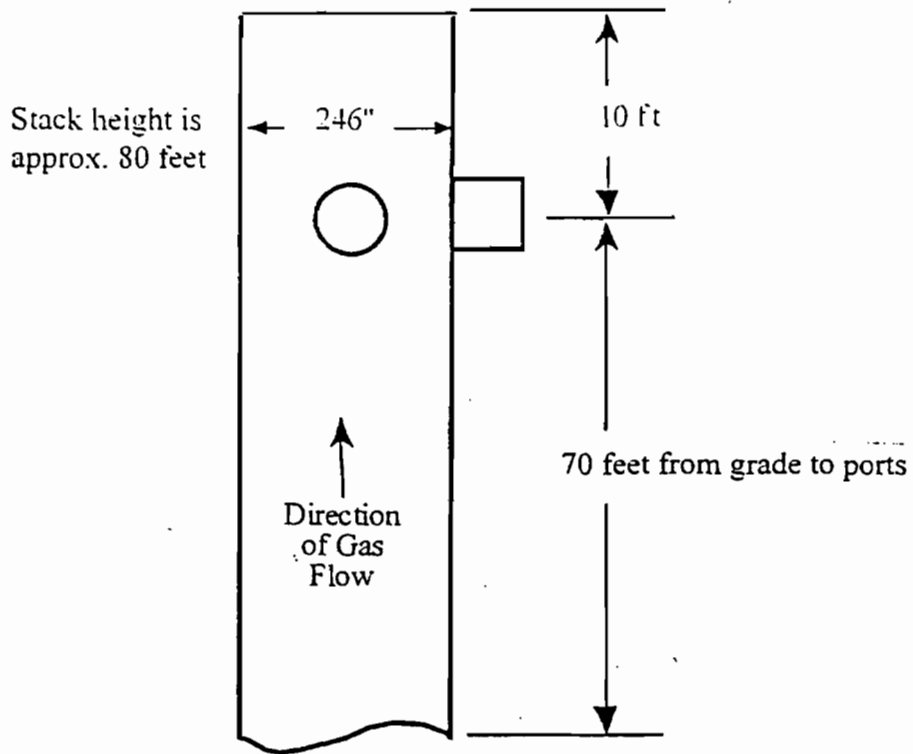
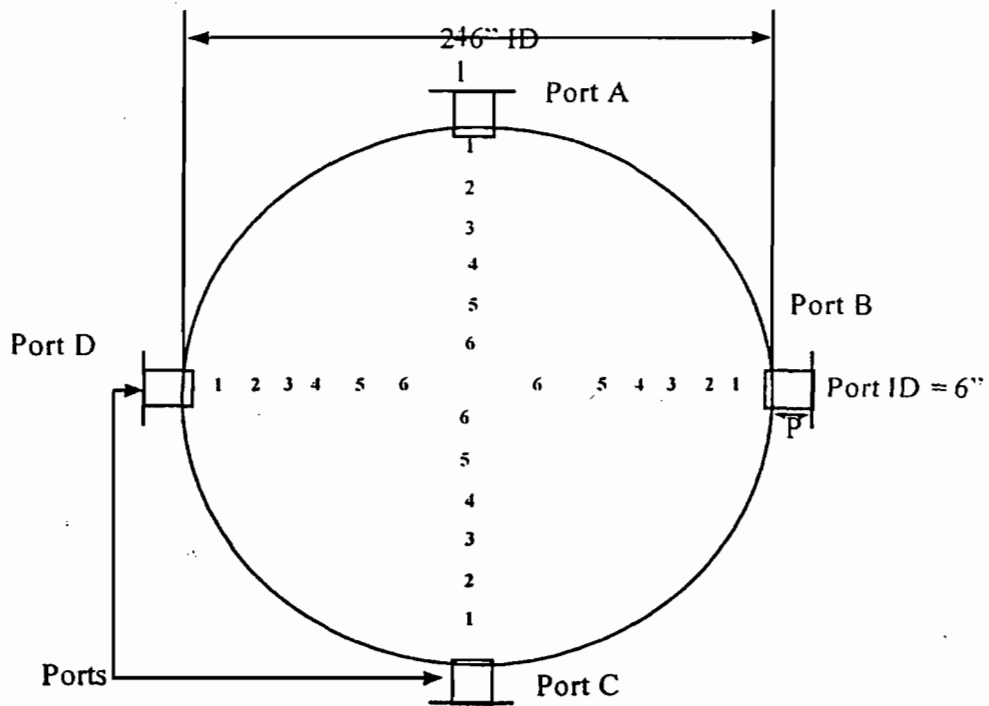
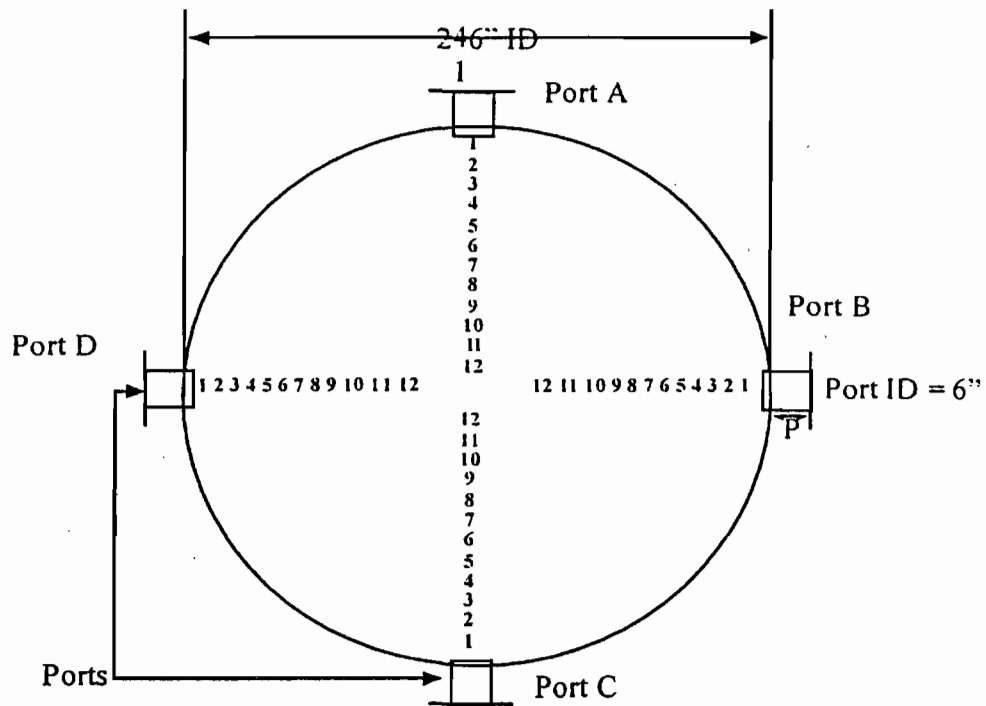


Figure - . Stack sample location.



<u>Traverse Point</u>	<u>% of Diameter from near wall</u>	<u>Distance from Inner Wall (inches)</u>	<u>+</u>	<u>Port Length (include wall thickness) (inches)</u>	<u>=</u>	<u>Distance from Outside of Port (inches)</u>
1	2.1	5.2		6		11.2
2	6.7	16.5				22.5
3	11.8	29.0				35.0
4	17.7	43.5				49.5
5	25.0	61.5				67.5
6	35.6	87.9				93.6

Figure - . Traverse Points for Particulate Sampling



<u>Traverse Point</u>	<u>% of Diameter from near wall</u>	<u>Distance from Inner Wall (inches)</u>	+	<u>Port Length (include wall thickness) (inches)</u>	=	<u>Distance from Outside of Port (inches)</u>
1	1.1	2.7		6		8.7
2	3.2	7.9				13.9
3	5.5	13.5				19.5
4	7.9	19.4				25.4
5	10.5	25.8				31.8
6	13.2	32.5				38.5
7	16.1	39.6				45.6
8	19.4	47.7				53.7
9	23.0	56.6				62.6
10	27.2	66.9				72.9
11	32.3	79.5				85.5
12	39.8	97.9				104

Figure - . Traverse point sampling CEMS

Appendix J

Unit 8B
CEMS DATA

Method 20 Oxygen Traverse

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

8B
 data

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
-0.03	0.01	-0.02	00:09:05:27.002
-0.03	0.01	-0.03	00:09:05:42.002
0	0.01	-0.02	00:09:05:57.002
0.01	0.01	-0.03	00:09:06:12.000
0.01	0.01	-0.03	00:09:06:27.000
0	0.01	-0.02	00:09:06:42.000
0.01	0.01	-0.03	00:09:06:57.000
0.01	0.01	-0.03	00:09:07:12.000
0.01	0.01	-0.03	00:09:07:27.000
0	0.01	-0.02	00:09:07:42.000
0	0.01	-0.02	00:09:07:57.000
0	0.01	-0.03	00:09:08:12.000
0.01	0.01	-0.02	00:09:08:27.000
0	0.01	-0.02	00:09:08:42.000
0	0.01	-0.02	00:09:08:57.000
0	0.01	-0.02	00:09:09:12.000
0	0.01	-0.02	00:09:09:27.000
0	0.01	-0.02	00:09:09:42.000
0.01	0.01	-0.01	00:09:09:57.000
0	0.01	0	Direct Zero
0	0.01	0	00:09:10:27.000
-0.01	0.01	-0.01	00:09:10:42.000
7.99	0.06	0	00:09:10:57.000
20.96	0.02	0	00:09:11:12.000
21.06	0.01	0.01	00:09:11:27.000
21.01	0.01	0.01	00:09:11:42.000
21.01	0.01	0.01	00:09:11:57.000
21.01	0.01	0	High O2
21.01	0.01	0	00:09:12:27.000
21.01	0.01	0	00:09:12:42.000
20.41	0.01	0	00:09:12:57.000
12.59	0.01	-0.01	00:09:13:12.000
12.15	0	0	00:09:13:27.000
12.16	0.01	-0.01	00:09:13:42.000
12.14	0.01	0	00:09:13:57.000
12.09	0.01	0	00:09:14:12.000
12.07	0.01	0	00:09:14:27.000
12.07	0.01	0	Mid O2
12.07	0.01	0	00:09:14:57.000
12.06	0.01	-0.01	00:09:15:12.000
10.55	0.81	0	00:09:15:27.000
0.65	7.64	0.01	00:09:15:42.000
0.02	8.05	0.04	00:09:15:57.000

JH

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0	7.97	0.02	00:09:16:12.000
-0.02	7.99	0	00:09:16:27.000
-0.01	7.99	0	00:09:16:42.000
-0.02	7.99	-0.01	00:09:16:57.000
-0.01	8	0	High CO2
0.02	7.99	0	00:09:17:27.000
0.02	7.99	0	00:09:17:42.000
0.05	7.14	0	00:09:17:57.000
0.05	5.03	0	00:09:18:12.000
0.02	5.04	0.01	00:09:18:27.000
0.02	5.03	0.01	00:09:18:42.000
0.02	5.03	-0.01	00:09:18:57.000
0.02	5.03	0	Mid CO2
0.02	5.03	-0.01	00:09:19:27.000
0.01	5.02	0	00:09:19:42.000
0.18	2.6	0.11	00:09:19:57.000
0.13	0.08	0.89	00:09:20:12.000
0.04	0.04	6	00:09:20:27.000
0.04	0.03	11.4	00:09:20:42.000
0.03	0.02	14.48	00:09:20:57.000
0.03	0.02	16.13	00:09:21:12.000
0.04	0.02	17.18	00:09:21:27.000
0.03	0.01	18.06	00:09:21:42.000
0.03	0.01	18.54	00:09:21:57.000
0.03	0.01	18.77	00:09:22:12.000
0.04	0.01	18.88	00:09:22:27.000
0.03	0.01	18.9	00:09:22:42.000
0.02	0.01	18.89	00:09:22:57.000
0.03	0.01	18.38	00:09:23:12.000
0.03	0.01	18.1	00:09:23:27.000
0.03	0.01	18	High Nox
0.03	0.01	18	00:09:23:57.000
0.03	0.01	17.98	00:09:24:12.000
0.03	0.01	17.96	00:09:24:27.000
0.03	0.01	17.95	00:09:24:42.000
0.04	0.01	17.94	00:09:24:57.000
0.03	0.01	17.95	00:09:25:12.000
0.03	0.01	18.02	00:09:25:27.000
0.03	0.01	18.02	00:09:25:42.000
0.03	0.01	17.99	00:09:25:57.000
0.02	0.02	17.96	00:09:26:12.000
0.03	0.01	17.65	00:09:26:27.000
0.02	0.01	15.87	00:09:26:42.000

Energy & Environmental Research

O2 Traverse

1 minute averaged data

For 5-23-2001 @ 10:50:07.48

O2	CO2	TIME
Percent	Percent	HH:MM:SS
13.84	4.02	00:10:50:07.000
13.84	4.01	00:10:51:07.000
13.84	4.01	00:10:52:07.000
13.84	4.02	00:10:53:07.000
13.84	4.02	00:10:54:07.000
13.84	4.02	00:10:55:07.000
13.84	4.01	00:10:56:07.000
14.83	3.47	00:10:57:07.000
17.64	1.89	00:10:58:07.000
13.93	3.95	00:10:59:07.000
13.84	4.01	00:11:00:07.000
13.84	4.02	00:11:01:07.000
13.84	4.01	00:11:02:07.000
13.85	4.01	00:11:03:07.000
13.85	4	00:11:04:07.000
13.85	4.01	00:11:05:07.000
13.84	4.01	00:11:06:07.000
13.85	4.01	00:11:07:07.000
13.85	4.01	00:11:08:07.000
13.85	4.01	00:11:09:07.000
13.85	4.01	00:11:10:07.000
13.85	4	00:11:11:07.000
13.85	4.01	00:11:12:07.000
13.86	4	00:11:13:07.000
13.85	4	00:11:14:07.000
13.92	3.96	00:11:15:07.000
13.85	4.01	00:11:16:07.000
13.84	4.01	00:11:17:07.000
13.84	4.02	00:11:18:07.000
13.85	4.01	00:11:19:07.000
13.86	4.01	00:11:20:07.000
13.86	4.01	00:11:21:07.000
13.86	4.01	00:11:22:07.000
13.86	4.01	00:11:23:07.000
13.85	4.01	00:11:24:07.000
13.85	4.01	00:11:25:07.000
13.85	4.01	00:11:26:07.004
13.85	4.01	00:11:27:07.004
13.85	4.01	00:11:28:07.004
13.86	4.02	00:11:29:07.004
13.85	4.02	00:11:30:07.004
13.85	4.01	00:11:31:07.004
13.86	4.01	00:11:32:07.004

13.86	4.01	00:11:33:07.004
13.85	4.01	00:11:34:07.004
13.86	4.01	00:11:35:07.004
13.85	4.01	00:11:36:07.004
13.86	4.01	00:11:37:07.004
13.86	4.01	00:11:38:07.004
13.85	4.01	00:11:39:07.004
13.86	4.01	00:11:40:07.004
13.85	4.01	00:11:41:07.004
13.86	4.01	00:11:42:07.004
13.86	4.01	00:11:43:07.004
13.85	4.01	00:11:44:07.004
13.85	4.01	00:11:45:07.004
13.85	4.01	00:11:46:07.004
13.85	4.01	00:11:47:07.004
13.85	4.01	00:11:48:07.004
13.85	4.02	00:11:49:07.004
19.54	0.82	00:11:50:07.004
14.38	3.7	00:11:51:07.004
13.93	3.95	00:11:52:07.004
13.85	4.01	00:11:53:07.004
13.85	4.01	00:11:54:07.004
13.85	4.01	00:11:55:07.004
13.85	4.01	00:11:56:07.004
13.85	4.01	00:11:57:07.004
13.85	4.01	00:11:58:07.004
13.85	4.01	00:11:59:07.004
13.85	4.01	00:12:00:07.004
13.85	4.01	00:12:01:07.004
13.86	4.02	00:12:02:07.004
13.87	4.02	00:12:03:07.004
13.87	4.02	00:12:04:07.004
13.88	4.02	00:12:05:07.004
13.87	4.02	00:12:06:07.004
13.87	4.02	00:12:07:07.004
13.88	4.02	00:12:08:07.004
13.88	4.02	00:12:09:07.004
13.88	4.02	00:12:10:07.004
13.88	4.02	00:12:11:07.004
13.88	4.02	00:12:12:07.004
13.88	4.02	00:12:13:07.004
13.88	4.02	00:12:14:07.004
13.88	4.02	00:12:15:07.004
13.89	4.02	00:12:16:07.004
13.89	4.02	00:12:17:07.004
13.89	4.02	00:12:18:07.004
17.93	1.7	00:12:19:07.004
18.91	1.22	00:12:20:07.004
13.89	4	00:12:21:07.004

13.88	4.01	00:12:22:07.004
13.87	4.02	00:12:23:07.004
13.87	4.01	00:12:24:07.004
13.87	4.01	00:12:25:07.004
13.86	4.02	00:12:26:07.004
13.87	4.02	00:12:27:07.004
13.87	4.02	00:12:28:07.004
13.86	4.02	00:12:29:07.004
13.86	4.02	00:12:30:07.004
13.87	4.02	00:12:31:07.004
13.86	4.03	00:12:32:07.004
13.86	4.03	00:12:33:07.004
13.86	4.02	00:12:34:07.004
13.86	4.03	00:12:35:07.004
13.86	4.03	00:12:36:07.004
13.86	4.02	00:12:37:07.004
13.86	4.02	00:12:38:07.004
13.86	4.03	00:12:39:07.004
13.86	4.02	00:12:40:07.004
13.85	4.03	00:12:41:07.004
13.85	4.03	00:12:42:07.004
13.86	4.02	00:12:43:07.004
13.86	4.03	00:12:44:07.004
13.86	4.03	00:12:45:07.004
13.89	4.02	00:12:46:07.004

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
0.09	0.02	0	-0.15	13.71	00:12:47:57.004
0.1	0.02	-0.01	-0.13	13.62	00:12:48:12.004
0.06	0.02	-0.01	-0.13	13.25	00:12:48:27.004
0.04	0.02	0	-0.15	13.01	00:12:48:42.004
0.04	0.01	-0.01	-0.15	12.8	00:12:48:57.004
0.04	0.01	0	-0.14	12.54	00:12:49:12.004
0.03	0.01	0	-0.14	12.33	00:12:49:27.004
0.03	0.02	0.04	-0.15	12.2	00:12:49:42.004
0.03	0.01	0.09	-0.15	12.1	00:12:49:57.004
0.03	0.01	0.1	-0.15	11.93	00:12:50:12.004
0.03	0.01	0.09	-0.15	11.75	00:12:50:27.004
0.03	0.01	0.09	-0.15	11.63	00:12:50:42.004
0.02	0.01	0.09	-0.15	11.51	00:12:50:57.004
0.03	0.01	0.1	-0.15	11.41	00:12:51:12.004
0.03	0.01	0.07	-0.15	11.35	00:12:51:27.004
0.02	0.01	0.07	-0.15	11.19	00:12:51:42.004
0.02	0.01	0.07	-0.15	11.11	00:12:51:57.004
0.02	0.01	0.07	-0.15	10.98	00:12:52:12.004
0.02	0.01	0.07	-0.15	10.92	00:12:52:27.004
0.02	0.01	0.08	-0.15	10.78	00:12:52:42.004
0.02	0.01	0.07	-0.15	10.71	00:12:52:57.004
0.02	0.01	0.07	-0.15	10.66	00:12:53:12.004
0.02	0.01	0.07	-0.15	10.66	00:12:53:27.004
0.02	0.01	0.07	-0.15	10.58	00:12:53:42.004
0.02	0.01	0.07	-0.14	10.46	00:12:53:57.004
0.02	0.01	0.06	-0.15	10.41	00:12:54:12.004
0.02	0.01	0.05	-0.15	10.34	00:12:54:27.004
0.02	0.01	0.05	-0.15	10.26	00:12:54:42.004
0.02	0.01	0.05	-0.15	10.27	00:12:54:57.004
0.01	0	0.05	-0.14	10.19	00:12:55:12.004
0.02	0	0.05	-0.15	10.16	00:12:55:27.004
0.02	0	0.05	-0.15	10.13	Zero
0.02	0	0.05	-0.16	10.11	00:12:55:57.004
0.02	0	0.05	-0.15	10.08	00:12:56:12.004
0.01	0.01	0.05	-0.15	10.04	00:12:56:27.004
0.02	0	0.05	-0.15	9.97	00:12:56:42.004
0.02	0	0.05	-0.15	9.92	00:12:56:57.004
0.03	0	0.05	-0.15	9.96	00:12:57:12.004
0.02	0.01	0.05	-0.15	9.85	00:12:57:27.004
0.02	0	0.05	-0.15	9.83	00:12:57:42.004
0.02	0	0.05	-0.15	9.78	00:12:57:57.004
0.01	0	0.05	-0.15	9.7	00:12:58:12.004
0.02	0	0.05	-0.15	9.68	00:12:58:27.004

0.02	0	0.05	-0.14	9.68 00:12:58:42.004
0.02	0	0.05	-0.14	9.67 00:12:58:57.004
0.01	0	0.05	-0.15	9.6 00:12:59:12.004
0.02	0	0.04	-0.15	9.59 00:12:59:27.004
0.02	0	0.05	-0.15	9.57 00:12:59:42.004
0.02	0	0.05	-0.15	9.53 00:12:59:57.004
0.01	0.01	0.03	-0.14	9.5 00:13:00:12.004
0.01	0	0.03	-0.12	9.48 00:13:00:27.004
0.02	0.01	0.04	-0.11	9.51 00:13:00:42.004
0.02	0	0.04	-0.09	9.45 00:13:00:57.004
0.01	0	0.03	-0.1	9.43 00:13:01:12.004
0.01	0	0.03	-0.09	9.4 00:13:01:27.004
0.01	0	0.03	-0.1	9.37 00:13:01:42.004
0.01	0	0.03	-0.11	9.36 00:13:01:57.004
0.01	0	0.03	-0.12	9.37 00:13:02:12.004
0.01	0	0.04	-0.11	9.29 00:13:02:27.004
0.02	0	0.03	-0.12	9.29 00:13:02:42.004
0.01	0	0.03	-0.12	9.27 00:13:02:57.004
0.01	0	0.03	-0.12	9.23 00:13:03:12.004
0.02	0	0.03	-0.12	9.22 00:13:03:27.004
0.02	0	0.03	-0.14	9.22 00:13:03:42.004
0.02	0	0.03	-0.12	9.21 00:13:03:57.004
0.01	0	0.03	-0.12	9.18 00:13:04:12.004
0.01	0	0.03	-0.13	9.14 00:13:04:27.004
0.01	0	0.03	-0.15	9.16 00:13:04:42.004
0.01	0	0.04	-0.14	9.11 00:13:04:57.004
0.01	0	0.03	-0.13	9.05 00:13:05:12.004
0.02	0	0.03	-0.12	9.07 00:13:05:27.004
0.01	0	0.03	-0.12	9.03 00:13:05:42.004
0.01	0	0.03	-0.12	8.99 00:13:05:57.004
0.01	0	0.03	-0.12	8.97 00:13:06:12.004
0.01	0	0.03	-0.13	8.96 00:13:06:27.004
0.02	0	0.03	-0.13	8.99 00:13:06:42.004
-0.01	0	0.03	-0.12	8.96 00:13:06:57.004
0	0	0.04	-0.13	8.94 00:13:07:12.004
0.03	0	0.04	-0.15	8.92 00:13:07:27.004
2.63	0.04	0.05	-0.15	8.93 00:13:07:42.004
11.29	0.01	0.12	-0.13	8.91 00:13:07:57.004
11.82	0	0.16	-0.15	8.88 00:13:08:12.004
11.84	0	0.07	-0.15	8.83 00:13:08:27.004
11.86	0	0.04	-0.15	8.83 00:13:08:42.004
11.86	0	0.04	-0.15	8.81 00:13:08:57.004
11.88	0	0.03	-0.15	8.82 00:13:09:12.004
11.87	0	0.03	-0.15	8.78 00:13:09:27.004
11.88	0	0.04	-0.15	8.74 00:13:09:42.004
11.88	0	0.03	-0.15	8.71 00:13:09:57.004
11.89	0	0.03	-0.15	8.71 00:13:10:12.004
11.88	0	0.03	-0.14	8.69 00:13:10:27.004
11.89	0	0.03	-0.15	8.67 00:13:10:42.004

11.87	0	0.04	-0.16	8.68 O2
11.87	0	0.03	-0.16	8.66 00:13:11:12.004
11.88	0	0.03	-0.15	8.65 00:13:11:27.004
7.47	2.87	0.03	-0.15	8.63 00:13:11:42.004
0.29	7.67	0.04	-0.16	8.61 00:13:11:57.004
0.05	7.81	0.06	-0.17	8.57 00:13:12:12.004
0.03	7.84	0.05	-0.15	8.58 00:13:12:27.004
0.01	7.86	0.03	-0.15	8.58 00:13:12:42.004
0.01	7.87	0.03	-0.14	8.54 00:13:12:57.004
0.01	7.88	0.04	-0.15	8.55 00:13:13:12.004
0	7.88	0.04	-0.16	8.54 00:13:13:27.004
0	7.89	0.03	-0.15	8.52 CO2
0	7.89	0.03	-0.17	8.5 00:13:13:57.004
-0.01	7.88	0.04	-0.17	8.48 00:13:14:12.004
-0.01	7.89	0.03	-0.15	8.49 00:13:14:27.004
-0.01	7.88	0.03	-0.16	8.48 00:13:14:42.004
-0.02	7.88	0.04	-0.16	8.47 00:13:14:57.004
-0.01	7.89	0.03	-0.16	8.45 00:13:15:12.004
-0.01	7.9	0.03	-0.15	8.43 00:13:15:27.004
0.12	5	0.05	-0.17	8.47 00:13:15:42.004
0.05	0.38	0.33	-0.17	8.44 00:13:15:57.004
0.02	0.13	2.18	-0.15	8.42 00:13:16:12.004
0.01	0.09	7.64	-0.16	8.41 00:13:16:27.004
0.01	0.06	8.86	-0.16	8.41 00:13:16:42.004
0.01	0.05	9.13	-0.17	8.42 00:13:16:57.004
0.01	0.04	9.37	-0.15	8.41 00:13:17:12.004
0.01	0.04	9.57	-0.15	8.4 00:13:17:27.004
0.01	0.03	9.68	-0.16	8.4 00:13:17:42.004
0.01	0.03	9.72	-0.16	8.38 00:13:17:57.004
0.01	0.02	9.74	-0.16	8.4 00:13:18:12.004
0.01	0.02	9.9	-0.17	8.4 00:13:18:27.004
0.01	0.02	9.98	-0.16	8.37 00:13:18:42.004
0.01	0.02	9.98	-0.15	8.36 00:13:18:57.004
0.01	0.02	9.98	-0.15	8.33 NOx
0	0.02	9.95	-0.15	8.32 00:13:19:27.004
0.01	0.01	9.95	-0.15	8.31 00:13:19:42.004
0.01	0.01	9.95	-0.13	8.33 00:13:19:57.004
0.01	0.01	9.94	-0.13	8.31 00:13:20:12.004
0	0.02	9.92	-0.15	8.29 00:13:20:27.004
-0.02	0.02	9.9	-0.12	8.27 00:13:20:42.004
-0.02	0.02	9.9	-0.12	8.26 00:13:20:57.004
-0.02	0.02	8.82	-0.12	8.26 00:13:21:12.004
0.03	0.02	5.65	0.06	8.26 00:13:21:27.004
3.23	0.03	3.9	0.88	8.27 00:13:21:42.004
5.18	0.07	4.39	1.29	8.28 00:13:21:57.004
5.58	0.16	6.22	1.24	8.29 00:13:22:12.004
5.08	0.16	8.89	0.93	8.29 00:13:22:27.004
2.31	0.05	9.75	0.41	8.28 00:13:22:42.004
0.37	0.06	5.59	0.08	8.28 00:13:22:57.004

BASE LOAD

PLANT: Florida Power and Light RUN NUMBER 8B-100-1 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 14:15 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 15:18 CHECKED BY: *W. White*
 START DATE: 5/23/01
 END DATE: 5/23/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.01	8.00	18.00	18.04	18.05
	MID	12.07	5.03	9.99	10.00	10.01
	LO			5.95	6.03	5.98
	ZERO	0.00	0.01	0.00	0.00	0.07
RESPONSE TIME (SECONDS)		45	48	55	65	50
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.0%	0.0%	0.0%	0.2%	0.3%
	MID	0.3%	0.3%	0.0%	0.0%	0.0%
	LO	N/A	N/A	-0.2%	0.2%	-0.1%
	ZERO	N/A	0.1%	N/A	N/A	0.4%
INITIAL BIAS CHECK, C _{bi} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
	UPSCALE	11.87	7.89	9.96	10.00	10.07
	ZERO	0.02	0.00	0.05	-0.09	0.01
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	-0.5%	-1.1%	-0.1%	0.0%	0.4%
	ZERO	0.1%	-0.1%	0.3%	-0.5%	-0.3%
FINAL BIAS CHECK, C _{bf} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.00	8.04	9.97	9.94	10.00
	ZERO	0.00	0.00	0.11	-0.16	0.01
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/(Span))x100%	UPSCALE	0.0%	0.4%	-0.1%	-0.3%	0.0%
	ZERO	0.0%	-0.1%	0.6%	-0.8%	-0.3%
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/(Span))x100%	UPSCALE	0.5%	1.5%	0.0%	-0.3%	-0.4%
	ZERO	-0.1%	0.0%	0.3%	-0.4%	0.0%
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.01	0.00	0.08	-0.13	0.01
AVERAGE % BIAS	UPSCALE	-0.3%	-0.4%	-0.1%	-0.2%	0.2%
	ZERO	0.0%	-0.1%	0.4%	-0.6%	-0.3%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		11.94	7.97	9.98	9.97	10.04
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		13.51	4.15	9.69	0.11	0.00

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.58	4.17	9.71	0.23	0.00
15% O2 CORRECTION, C _{15%} = C _{gas} * 5.9 / (20.9 - % O2)		3.36	7.83	0.19	0.00

PLANT: Florida Power and Light RUN NUMBER 8B-100-2 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 18:18 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 19:18 CHECKED BY: *[Signature]*
 START DATE: 5/23/01
 END DATE: 5/23/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.01	8.00	18.00	18.04	18.05
	MID	12.07	5.03	9.99	10.00	10.01
	LO			5.95	6.03	5.98
	ZERO	0.00	0.01	0.00	0.00	0.07
RESPONSE TIME (SECONDS)		45	48	55	65	50
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.0%	0.0%	0.0%	0.2%	0.3%
	MID	0.3%	0.3%	0.0%	0.0%	0.0%
	LO	N/A	N/A	-0.2%	0.2%	-0.1%
	ZERO	N/A	0.1%	N/A	N/A	0.4%
INITIAL BIAS CHECK, C _{bi} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
	UPSCALE	11.91	8.03	10.00	10.08	9.94
	ZERO	0.01	0.00	0.20	0.00	-0.01
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	-0.4%	0.3%	0.0%	0.4%	-0.3%
	ZERO	0.0%	-0.1%	1.0%	0.0%	-0.4%
FINAL BIAS CHECK, C _{bf} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.95	8.01	10.03	10.15	10.09
	ZERO	0.00	0.01	0.01	0.03	0.00
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/Span)x100%	UPSCALE	-0.2%	0.1%	0.1%	0.8%	0.4%
	ZERO	0.0%	0.0%	0.1%	0.2%	-0.4%
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/Span)x100%	UPSCALE	0.2%	-0.2%	0.1%	0.4%	0.8%
	ZERO	0.0%	0.1%	-1.0%	0.2%	0.1%
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.01	0.01	0.11	0.02	-0.01
AVERAGE % BIAS	UPSCALE	-0.3%	0.2%	0.1%	0.6%	0.1%
	ZERO	0.0%	-0.1%	0.5%	0.1%	-0.4%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		11.93	8.02	10.02	10.12	10.02
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		13.64	4.25	9.74	0.17	0.00

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.72	4.24	9.72	0.15	0.00
15% O2 CORRECTION, C15% = C _{gas} * 5.9 / (20.9 - % O2)		3.48	7.99	0.13	0.00

PLANT: Florida Power and Light RUN NUMBER 8B-100-3 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 19:54 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 20:54 CHECKED BY: *MJW*
 START DATE: 5/23/01
 END DATE: 5/23/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx	CO	THC
LOCATION		Stack	Stack	Stack	Stack	Stack
CONCENTRATION UNIT		% dry	% dry	ppmvd	ppmvd	ppmvd
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	0.90	0.90
SPAN		25	10	20	20	20
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	18.00	18.00
	MID	12.00	5.00	10.00	10.00	10.00
	LO			6.00	6.00	6.00
	ZERO	0.0	0.0	0.00	0.0	0.00
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.01	8.00	18.00	18.04	18.05
	MID	12.07	5.03	9.99	10.00	10.01
	LO			5.95	6.03	5.88
	ZERO	0.00	0.01	0.00	0.00	0.07
RESPONSE TIME (SECONDS)		45	48	55	65	50
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.0%	0.0%	0.0%	0.2%	0.3%
Ei = ((Cma - Cai)/Span)x100%	MID	0.3%	0.3%	0.0%	0.0%	0.0%
	LO	N/A	N/A	-0.2%	0.2%	-0.1%
	ZERO	N/A	0.1%	N/A	N/A	0.4%
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	M	M
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.95	8.01	10.03	10.15	10.09
	ZERO	0.00	0.01	0.01	0.03	0.00
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	-0.2%	0.1%	0.1%	0.8%	0.4%
Bi = ((Cbi-Cai)/Span)x100%	ZERO	0.0%	0.0%	0.1%	0.2%	-0.4%
FINAL BIAS CHECK, Cbf	UPSCALE	11.89	7.89	9.98	10.00	10.07
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.00	0.05	-0.09	0.01
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	-0.4%	-1.1%	-0.1%	0.0%	0.4%
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	-0.1%	0.3%	-0.5%	-0.3%
DRIFT CHECK, D	UPSCALE	-0.2%	-1.2%	-0.2%	-0.8%	-0.1%
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.1%	-0.1%	0.2%	-0.6%	0.1%
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.01	0.01	0.03	-0.03	0.01
Co=(Cbi.zero+Cbf.zero)/2						
AVERAGE % BIAS	UPSCALE	-0.3%	-0.5%	0.0%	0.4%	0.4%
	ZERO	0.0%	-0.1%	0.2%	-0.2%	-0.3%
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		11.92	7.95	10.01	10.08	10.08
Cm=(Cbi.upscale+Cbf.upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.64	4.25	9.78	0.19	-0.04

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.73	4.27	9.77	0.22	0.00
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9- % O2)		3.52	8.05	0.18	0.00

GE-Energy & Environmental Research

Pre Test Calibration 5-23-01

15 sec Averaged data

UNIT 8B

For 5-23-2001 @ 09:05:27.62

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
-0.03	0.01	-0.02	0.21	10.06	00:09:05:27.002
-0.03	0.01	-0.03	0.22	10.07	00:09:05:42.002
0	0.01	-0.02	0.21	10.09	00:09:05:57.002
0.01	0.01	-0.03	0.2	10.09	00:09:06:12.000
0.01	0.01	-0.03	0.22	10.11	00:09:06:27.000
0	0.01	-0.02	0.22	10.12	00:09:06:42.000
0.01	0.01	-0.03	0.2	10.13	00:09:06:57.000
0.01	0.01	-0.03	0.21	10.14	00:09:07:12.000
0.01	0.01	-0.03	0.22	10.15	00:09:07:27.000
0	0.01	-0.02	0.2	10.13	00:09:07:42.000
0	0.01	-0.02	0.21	10.11	00:09:07:57.000
0	0.01	-0.03	0.22	10.13	00:09:08:12.000
0.01	0.01	-0.02	0.22	10.14	00:09:08:27.000
0	0.01	-0.02	0.2	10.13	00:09:08:42.000
0	0.01	-0.02	0.21	10.15	00:09:08:57.000
0	0.01	-0.02	0.21	10.16	00:09:09:12.000
0	0.01	-0.02	0.17	10.18	00:09:09:27.000
0	0.01	-0.02	0	10.24	00:09:09:42.000
0.01	0.01	-0.01	0	10.21	00:09:09:57.000
0	0.01	0	0	10.22	Direct Zero
0	0.01	0	0	10.21	00:09:10:27.000
-0.01	0.01	-0.01	0	10.21	00:09:10:42.000
7.99	0.06	0	0	10.2	00:09:10:57.000
20.96	0.02	0	0.51	10.19	00:09:11:12.000
21.06	0.01	0.01	1.39	10.19	00:09:11:27.000
21.01	0.01	0.01	1.63	10.2	00:09:11:42.000
21.01	0.01	0.01	1.49	10.18	00:09:11:57.000
21.01	0.01	0	1.07	10.19	High O2
21.01	0.01	0	0.61	10.19	00:09:12:27.000
21.01	0.01	0	0.19	10.18	00:09:12:42.000
20.41	0.01	0	0	10.2	00:09:12:57.000
12.59	0.01	-0.01	-0.09	10.21	00:09:13:12.000
12.15	0	0	-0.1	10.19	00:09:13:27.000
12.16	0.01	-0.01	-0.1	10.19	00:09:13:42.000
12.14	0.01	0	-0.09	10.22	00:09:13:57.000
12.09	0.01	0	-0.08	10.2	00:09:14:12.000
12.07	0.01	0	-0.08	10.17	00:09:14:27.000
12.07	0.01	0	-0.08	10.23	Mid O2
12.07	0.01	0	-0.08	10.25	00:09:14:57.000
12.06	0.01	-0.01	-0.08	10.21	00:09:15:12.000
10.55	0.81	0	-0.08	10.19	00:09:15:27.000
0.65	7.64	0.01	0.02	10.19	00:09:15:42.000

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.02	8.05	0.04	0.2	10.18	00:09:15:57.000
0	7.97	0.02	0.19	10.19	00:09:16:12.000
-0.02	7.99	0	0.13	10.17	00:09:16:27.000
-0.01	7.99	0	-0.01	10.17	00:09:16:42.000
-0.02	7.99	-0.01	-0.16	10.14	00:09:16:57.000
-0.01	8	0	-0.32	10.15	High CO2
0.02	7.99	0	-0.41	10.15	00:09:17:27.000
0.02	7.99	0	-0.45	10.15	00:09:17:42.000
0.05	7.14	0	-0.47	10.14	00:09:17:57.000
0.05	5.03	0	-0.39	10.13	00:09:18:12.000
0.02	5.04	0.01	-0.09	10.12	00:09:18:27.000
0.02	5.03	0.01	0.02	10.12	00:09:18:42.000
0.02	5.03	-0.01	0.04	10.14	00:09:18:57.000
0.02	5.03	0	-0.04	10.15	Mid CO2
0.02	5.03	-0.01	-0.16	10.13	00:09:19:27.000
0.01	5.02	0	-0.29	10.12	00:09:19:42.000
0.18	2.6	0.11	-0.34	10.22	00:09:19:57.000
0.13	0.08	0.89	0.58	10.13	00:09:20:12.000
0.04	0.04	6	1.58	10.14	00:09:20:27.000
0.04	0.03	11.4	1.79	10.13	00:09:20:42.000
0.03	0.02	14.48	1.68	10.12	00:09:20:57.000
0.03	0.02	16.13	1.17	10.12	00:09:21:12.000
0.04	0.02	17.18	0.59	10.12	00:09:21:27.000
0.03	0.01	18.06	0.16	10.12	00:09:21:42.000
0.03	0.01	18.54	0	10.12	00:09:21:57.000
0.03	0.01	18.77	-0.06	10.11	00:09:22:12.000
0.04	0.01	18.88	-0.06	10.11	00:09:22:27.000
0.03	0.01	18.9	-0.07	10.1	00:09:22:42.000
0.02	0.01	18.89	-0.06	10.1	00:09:22:57.000
0.03	0.01	18.38	-0.07	10.1	00:09:23:12.000
0.03	0.01	18.1	-0.06	10.1	00:09:23:27.000
0.03	0.01	18	-0.08	10.09	High Nox
0.03	0.01	18	-0.07	10.08	00:09:23:57.000
0.03	0.01	17.98	-0.08	10.09	00:09:24:12.000
0.03	0.01	17.96	-0.08	10.09	00:09:24:27.000
0.03	0.01	17.95	-0.08	10.09	00:09:24:42.000
0.04	0.01	17.94	-0.07	10.08	00:09:24:57.000
0.03	0.01	17.95	-0.08	10.08	00:09:25:12.000
0.03	0.01	18.02	-0.08	10.08	00:09:25:27.000
0.03	0.01	18.02	-0.06	10.08	00:09:25:42.000
0.03	0.01	17.99	-0.07	10.08	00:09:25:57.000
0.02	0.02	17.96	-0.08	10.1	00:09:26:12.000

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.03	0.01	17.65	-0.03	10.09	00:09:26:27.000
0.02	0.01	15.87	0.18	10.1	00:09:26:42.000
0.02	0.01	11.15	0.28	10.1	00:09:26:57.000
0.03	0.01	10	0.28	10.09	00:09:27:12.000
0.02	0.01	10	0.25	10.11	00:09:27:27.000
0.02	0.01	9.99	0.12	10.09	Mid NOx
0.02	0.01	9.99	0.02	10.14	00:09:27:57.000
0.02	0.01	9.98	-0.02	10.13	00:09:28:12.000
0	0.01	9.97	-0.04	10.08	00:09:28:27.000
0.03	0.01	9.47	-0.04	10.08	00:09:28:42.000
0.03	0.01	8.39	-0.04	10.08	00:09:28:57.000
0.02	0.01	6.83	-0.02	10.08	00:09:29:12.000
0.03	0.01	5.96	-0.02	10.11	00:09:29:27.000
0.03	0.01	5.96	-0.02	10.16	00:09:29:42.000
0.03	0.01	5.95	-0.02	10.2	00:09:29:57.000
0.03	0.01	5.95	-0.03	10.24	Low NOx
0.02	0.01	5.95	-0.04	10.22	00:09:30:27.000
0.02	0	5.94	-0.04	10.24	00:09:30:42.000
0.01	0.01	5.92	-0.03	10.24	00:09:30:57.000
0.07	0.01	6.02	0.1	10.27	00:09:31:12.000
0.04	0.01	3.6	1.39	10.29	00:09:31:27.000
0.04	0.01	0.91	3.78	10.26	00:09:31:42.000
0.03	0.01	1.14	5.44	10.27	00:09:31:57.000
0.04	0.01	0.58	8.26	10.27	00:09:32:12.000
0.03	0.01	0.22	10.89	10.29	00:09:32:27.000
0.03	0.01	0.08	13.35	10.27	00:09:32:42.000
0.04	0.01	0.06	15.15	10.27	00:09:32:57.000
0.04	0.01	0.05	16.59	10.28	00:09:33:12.000
0.03	0.01	0.04	17.26	10.27	00:09:33:27.000
0.03	0.01	0.04	17.57	10.27	00:09:33:42.000
0.03	0	0.04	17.66	10.3	00:09:33:57.000
0.02	0.01	0.03	17.74	10.31	00:09:34:12.000
0.02	0.01	0.03	17.8	10.32	00:09:34:27.000
0.03	0.01	0.02	17.84	10.33	00:09:34:42.000
0.02	0.01	0.01	17.88	10.33	00:09:34:57.000
0.03	0.01	0.01	17.92	10.32	00:09:35:12.000
0.02	0.01	0.01	17.95	10.32	00:09:35:27.000
0.03	0.01	0.01	17.94	10.33	00:09:35:42.000
0.02	0.01	0.01	17.99	10.34	00:09:35:57.000
0.02	0.01	0.01	18.05	10.33	00:09:36:12.000
0.02	0.01	0.02	18.03	10.33	00:09:36:27.000
0.02	0.01	0.01	18.04	10.31	High CO

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
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 For 5-23-2001 @ 09:05:27.62

UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.01	0.01	0.01	18.05	10.32	00:09:36:57.000
0.01	0.01	0.02	18.08	10.31	00:09:37:12.000
0.02	0.01	0.01	17.84	10.31	00:09:37:27.000
0.02	0.01	0.01	16.29	10.3	00:09:37:42.000
0.02	0.01	0.01	14.67	10.29	00:09:37:57.000
0.02	0.01	0.01	12.74	10.28	00:09:38:12.000
0.02	0.01	0.01	11.46	10.27	00:09:38:27.000
0.02	0.01	0.02	10.48	10.28	00:09:38:42.000
0.01	0.01	0.02	10.14	10.27	00:09:38:57.000
0.02	0.01	0.01	10.03	10.27	00:09:39:12.000
0.02	0.01	0.01	10.03	10.27	00:09:39:27.000
0.02	0.01	0.02	10	10.26	Mid CO
0.02	0.01	0.02	9.99	10.25	00:09:39:57.000
0.01	0.01	0.02	9.95	10.24	00:09:40:12.000
0.01	0	0.01	9.45	10.24	00:09:40:27.000
0.01	0	0	8.47	10.24	00:09:40:42.000
0.01	0	0	7.71	10.24	00:09:40:57.000
0.01	0	-0.01	6.86	10.24	00:09:41:12.000
0.01	0.01	-0.01	6.38	10.24	00:09:41:27.000
0.02	0	0	6.13	10.24	00:09:41:42.000
0.02	0.01	-0.01	6.08	10.26	00:09:41:57.000
0.02	0.01	-0.01	6.05	10.27	00:09:42:12.000
0.01	0.01	0	6.04	10.25	00:09:42:27.000
0.02	0.01	0	6.04	10.25	00:09:42:42.000
0.01	0.01	0	6.04	10.25	00:09:42:57.000
0.01	0.01	-0.01	6.03	10.25	00:09:43:12.000
0.01	0.01	-0.01	6.03	10.24	00:09:43:27.000
0.01	0.01	0	6.04	10.24	00:09:43:42.000
0.02	0.01	0	6.03	10.25	00:09:43:57.000
0.02	0.01	-0.01	6.02	10.26	00:09:44:12.000
0.02	0.01	0	6.03	10.26	Low CO
0.02	0.01	-0.01	6.04	10.26	00:09:44:42.000
0.02	0.01	0	6.02	10.26	00:09:44:57.000
0.01	0	0	6.03	10.26	00:09:45:12.000
-0.02	0.01	0	6.04	10.27	00:09:45:27.000
0.85	0.04	-0.01	6.05	10.29	00:09:45:42.000
16.81	0.59	1.19	9.45	10.28	00:09:45:57.000
15.81	0.73	6.07	20.02	10.29	00:09:46:12.000
13.51	1.19	5.85	20.02	10.29	00:09:46:27.000
9.16	2.19	4.27	20.02	10.28	00:09:46:42.000
9.37	1.8	4.77	20.02	10.29	00:09:46:57.000
13.27	0.97	5.55	20.02	10.29	00:09:47:12.000

GE-Energy & Environmental Research

Pre Test Calibration 5-23-01

15 sec Averaged data

UNIT 8B

For 5-23-2001 @ 09:05:27.62

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
2.2	0.18	3.3	20.02	10.3	00:09:47:27.000
0.31	0.06	0.78	20.02	10.31	00:09:47:42.000
0.18	0.04	0.29	20.02	10.3	00:09:47:57.000
0.16	0.04	0.16	20.02	10.32	00:09:48:12.000
0.15	0.03	0.13	20.02	10.31	00:09:48:27.000
0.14	0.03	0.12	20.02	10.3	00:09:48:42.000
0.13	0.03	0.12	20.02	10.3	00:09:48:57.000
0.13	0.03	0.12	20.02	10.31	00:09:49:12.000
0.12	0.02	0.12	16.32	10.33	00:09:49:27.000
0.12	0.03	0.12	10.94	10.33	00:09:49:42.000
0.13	0.03	0.12	9.63	10.34	00:09:49:57.000
0.11	0.02	0.12	8.85	10.35	00:09:50:12.000
0.11	0.02	0.12	8.44	10.36	00:09:50:27.000
0.13	0.02	0.12	8.03	10.37	00:09:50:42.000
0.13	0.03	0.12	7.85	10.37	00:09:50:57.000
0.1	0.02	0.12	7.79	10.39	00:09:51:12.000
0.09	0.01	0.11	7.37	10.39	00:09:51:27.000
0.09	0.01	0.09	6.38	10.38	00:09:51:42.000
0.09	0.01	0.08	5.52	10.39	00:09:51:57.000
0.09	0.01	0.07	4.48	10.4	00:09:52:12.000
0.09	0.01	0.08	3.83	10.4	00:09:52:27.000
0.08	0.01	0.08	3.41	10.41	00:09:52:42.000
0.09	0.01	0.08	3.26	10.43	00:09:52:57.000
0.08	0.01	0.08	3.13	10.44	00:09:53:12.000
0.09	0.01	0.1	3.07	10.44	00:09:53:27.000
0.08	0.01	0.1	3.01	10.46	00:09:53:42.000
0.09	0.01	0.1	2.97	10.45	00:09:53:57.000
0.09	0.01	0.1	2.91	10.49	00:09:54:12.000
0.08	0.02	0.1	2.89	10.49	00:09:54:27.000
0.08	0.01	0.1	2.85	10.49	00:09:54:42.000
0.08	0.01	0.1	2.82	10.49	00:09:54:57.000
0.08	0.01	0.1	2.78	10.51	Bias Zero
0.08	0.01	0.1	2.76	10.5	00:09:55:27.000
0.08	0.01	0.09	2.73	10.49	00:09:55:42.000
0.08	0.01	0.09	2.72	10.52	00:09:55:57.000
3.06	0.1	0.1	2.77	10.51	00:09:56:12.000
11.36	0.03	0.16	3	10.52	00:09:56:27.000
11.93	0.01	0.16	3.41	10.54	00:09:56:42.000
11.96	0.01	0.14	3.48	10.56	00:09:56:57.000
11.98	0.01	0.11	3.39	10.58	00:09:57:12.000
11.99	0.01	0.08	3.2	10.61	00:09:57:27.000
11.99	0.01	0.08	2.89	10.6	00:09:57:42.000

GE-Energy & Environmental Research

Pre Test Calibration 5-23-01

15 sec Averaged data

UNIT 8B

For 5-23-2001 @ 09:05:27.62

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
12	0.01	0.08	2.7	10.61	O2 Bias
12	0.01	0.08	2.58	10.6	00:09:58:12.000
12.01	0.01	0.08	2.53	10.59	00:09:58:27.000
12.01	0.01	0.08	2.49	10.59	00:09:58:42.000
12.01	0.01	0.08	2.48	10.6	00:09:58:57.000
12.02	0.01	0.06	2.47	10.61	00:09:59:12.000
12.02	0.01	0.05	2.45	10.63	00:09:59:27.000
12.01	0.01	0.06	2.44	10.62	00:09:59:42.000
12.01	0.01	0.06	2.44	10.63	00:09:59:57.000
12.01	0.01	0.06	2.42	10.63	00:10:00:12.000
12.02	0.01	0.05	2.42	10.63	00:10:00:27.000
10.44	1.05	0.07	2.49	10.65	00:10:00:42.000
1.14	7.33	0.09	2.68	10.66	00:10:00:57.000
0.16	7.83	0.12	2.88	10.66	00:10:01:12.000
0.12	7.88	0.11	2.84	10.66	00:10:01:27.000
0.1	7.9	0.08	2.7	10.67	00:10:01:42.000
0.09	7.92	0.08	2.53	10.67	00:10:01:57.000
0.09	7.93	0.08	2.28	10.69	00:10:02:12.000
0.08	7.93	0.08	2.11	10.71	00:10:02:27.000
0.08	7.93	0.08	2	10.74	00:10:02:42.000
0.08	7.94	0.08	1.94	10.77	CO2 Bias
0.07	7.94	0.08	1.93	10.78	00:10:03:12.000
0.07	7.93	0.08	1.9	10.78	00:10:03:27.000
0.07	7.95	0.08	1.9	10.77	00:10:03:42.000
0.07	7.95	0.08	1.91	10.76	00:10:03:57.000
0.11	4.21	0.18	2.01	10.76	00:10:04:12.000
0.1	0.35	0.69	2.53	10.75	00:10:04:27.000
0.09	0.14	3.92	3.3	10.76	00:10:04:42.000
0.09	0.1	8.4	3.39	10.77	00:10:04:57.000
0.09	0.08	9.12	3.28	10.77	00:10:05:12.000
0.09	0.07	9.35	2.99	10.79	00:10:05:27.000
0.09	0.06	9.6	2.64	10.79	00:10:05:42.000
0.09	0.05	9.74	2.45	10.78	00:10:05:57.000
0.1	0.05	9.82	2.35	10.81	00:10:06:12.000
0.09	0.04	9.96	2.32	10.8	00:10:06:27.000
0.09	0.04	10.04	2.31	10.79	00:10:06:42.000
0.09	0.04	9.99	2.3	10.8	00:10:06:57.000
0.09	0.04	9.99	2.3	10.8	00:10:07:12.000
0.09	0.04	9.99	2.3	10.8	NOx Bias
0.08	0.03	9.99	2.3	10.79	00:10:07:42.000
0.08	0.03	9.92	2.3	10.79	00:10:07:57.000
0.08	0.03	9.99	2.29	10.8	00:10:08:12.000

GE-Energy & Environmental Research
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UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.09	0.03	9.99	2.28	10.8	00:10:08:27.000
0.1	0.03	9.97	2.27	10.81	00:10:08:42.000
0.1	0.03	9.99	2.22	10.82	00:10:08:57.000
0.08	0.03	10.01	2.33	10.8	00:10:09:12.000
0.07	0.04	9.98	3.06	10.79	00:10:09:27.000
0.06	0.04	9.93	4.26	10.78	00:10:09:42.000
0.06	0.04	9.1	4.76	10.77	00:10:09:57.000
6.16	0.06	6.44	4.86	10.78	00:10:10:12.000
4.04	0.06	5.09	4.76	10.77	00:10:10:27.000
0.18	0.06	4.69	4.73	10.75	00:10:10:42.000
0.2	0.1	5.72	4.99	10.75	00:10:10:57.000
0.11	0.04	8.11	6.18	10.75	00:10:11:12.000
0.1	0.02	5.07	6.97	10.73	00:10:11:27.000
0.1	0.02	1.43	6.68	10.72	00:10:11:42.000
0.1	0.02	0.39	5.97	10.73	00:10:11:57.000
0.1	0.03	0.11	4.76	10.73	00:10:12:12.000
0.09	0.02	0.09	3.7	10.74	00:10:12:27.000
0.08	0.02	0.1	3.65	10.76	00:10:12:42.000
0.07	0.03	0.1	5.84	10.77	00:10:12:57.000
0.06	0.02	0.11	6.98	10.77	00:10:13:12.000
0.06	0.02	0.1	5.57	10.77	00:10:13:27.000
0.07	0.03	0.07	3.02	10.76	00:10:13:42.000
0.06	0.03	0.04	1.14	10.77	00:10:13:57.000
0.33	0.03	0.03	0.29	10.76	00:10:14:12.000
1.42	0.03	0.03	0.08	10.74	00:10:14:27.000
1.77	0.03	0.03	0.03	10.75	00:10:14:42.000
1.52	0.03	0.03	0.02	10.75	00:10:14:57.000
0.68	0.03	0.03	0.02	10.76	00:10:15:12.000
0.3	0.04	0.01	0.02	10.75	00:10:15:27.000
0.16	0.04	0.01	0.01	10.75	00:10:15:42.000
0.11	0.05	0.01	0.02	10.73	CO Zero
0.1	0.07	0.01	0.02	10.73	00:10:16:12.000
0.09	0.05	0.01	0.02	10.72	00:10:16:27.000
0.07	0.04	0.02	0	10.72	00:10:16:42.000
0.05	0.03	0.01	0.01	10.73	00:10:16:57.000
0.05	0.03	0.01	0.01	10.72	00:10:17:12.000
0.05	0.03	0.02	0	10.73	00:10:17:27.000
0.04	0.03	0.02	0.02	10.72	00:10:17:42.000
0.04	0.03	0.03	0.01	10.7	00:10:17:57.000
0.04	0.03	0.03	0.19	10.72	00:10:18:12.000
0.04	0.02	0.03	1.44	10.71	00:10:18:27.000
0.04	0.02	0.2	3.46	10.72	00:10:18:42.000

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.04	0.02	0.37	4.74	10.75	00:10:18:57.000
0.05	0.02	0.3	6.25	10.78	00:10:19:12.000
0.04	0.02	0.2	7.37	10.77	00:10:19:27.000
0.04	0.02	0.08	8.54	10.78	00:10:19:42.000
0.04	0.02	0.06	9.25	10.79	00:10:19:57.000
0.04	0.02	0.05	9.67	10.8	00:10:20:12.000
0.04	0.02	0.05	9.79	10.8	00:10:20:27.000
0.04	0.02	0.06	9.84	10.79	00:10:20:42.000
0.04	0.02	0.05	9.86	10.79	00:10:20:57.000
0.04	0.02	0.06	9.89	10.8	00:10:21:12.000
0.04	0.02	0.06	9.9	10.79	00:10:21:27.000
0.04	0.02	0.05	9.9	10.81	00:10:21:42.000
0.04	0.02	0.06	9.92	10.82	00:10:21:57.000
0.04	0.02	0.07	9.94	10.79	00:10:22:12.000
0.04	0.02	0.08	9.94	10.8	00:10:22:27.000
0.04	0.02	0.08	9.93	10.79	00:10:22:42.000
0.04	0.02	0.08	9.94	10.8	CO Bias
0.05	0.02	0.08	9.94	10.81	00:10:23:12.000
0.05	0.02	0.08	9.86	10.82	00:10:23:27.000
0.04	0.01	0.05	9.17	10.81	00:10:23:42.000
0.03	0.01	0.04	7.14	10.82	00:10:23:57.000
0.04	0.01	0.02	4.83	10.83	00:10:24:12.000
0.04	0.01	0.01	3.04	10.85	00:10:24:27.000
0.04	0.01	0.02	1.48	10.79	00:10:24:42.000
0.05	0.01	0.02	0.63	10.62	00:10:24:57.000
0.04	0.01	0.01	0.13	7.82	00:10:25:12.000
0.03	0.01	0.01	-0.02	5.48	00:10:25:27.000
0.03	0.01	0.01	-0.08	6.63	00:10:25:42.000
0.03	0.02	0.01	-0.08	7.28	00:10:25:57.000
0.03	0.02	0.01	-0.08	4.98	00:10:26:12.000
0.03	0.02	0.01	-0.06	4.59	00:10:26:27.000
0.02	0.02	0.01	-0.08	0.14	00:10:26:42.000
0.02	0.02	0.02	-0.08	0.03	00:10:26:57.000
0.03	0.02	0.01	-0.08	0.07	00:10:27:12.000
0.03	0.02	0.01	-0.08	1.07	00:10:27:27.000
0.03	0.02	0.01	-0.09	0.07	00:10:27:42.000
0.03	0.02	0.01	-0.07	0.07	THC Zero
0.04	0.02	0.02	-0.07	0.07	00:10:28:12.000
0.04	0.02	0.01	-0.07	0.08	00:10:28:27.000
0.04	0.02	0.01	-0.06	0.06	00:10:28:42.000
0.04	0.02	0.02	-0.06	0.07	00:10:28:57.000
0.04	0.02	0.01	-0.07	0.08	00:10:29:12.000

GE-Energy & Environmental Research
 Pre Test Calibration 5-23-01
 15 sec Averaged data
 For 5-23-2001 @ 09:05:27.62

UNIT 8B

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.04	0.02	0.01	-0.05	0.04	00:10:29:27.000
0.04	0.02	0.01	-0.02	0.07	00:10:29:42.000
0.05	0.02	0	-0.02	0.07	00:10:29:57.000
0.05	0.02	0	-0.04	0.31	00:10:30:12.000
0.04	0.02	0	-0.04	-0.19	00:10:30:27.000
0.06	0.02	-0.01	-0.03	7.44	00:10:30:42.000
0.1	0.02	0	-0.04	25.86	00:10:30:57.000
0.09	0.03	0.01	-0.04	22.65	00:10:31:12.000
0.1	0.02	0.02	-0.04	22.62	00:10:31:27.000
0.09	0.02	0.01	-0.04	22.32	00:10:31:42.000
0.09	0.03	0.01	-0.06	19.22	00:10:31:57.000
0.09	0.02	0.01	-0.06	17.92	00:10:32:12.000
0.09	0.02	0.02	-0.05	17.99	00:10:32:27.000
0.09	0.03	0.02	-0.05	18.03	00:10:32:42.000
0.09	0.03	0.02	-0.06	18.05	00:10:32:57.000
0.09	0.03	0.02	-0.04	18.09	00:10:33:12.000
0.09	0.03	0.02	-0.06	18.05	00:10:33:27.000
0.09	0.03	0.01	-0.06	18.05	00:10:33:42.000
0.09	0.02	0.01	-0.06	18.05	THC High
0.09	0.02	0.02	-0.06	18.05	00:10:34:12.000
0.09	0.03	0.02	-0.08	18.05	00:10:34:27.000
0.1	0.03	0.01	-0.08	18.05	00:10:34:42.000
0.09	0.03	0.01	-0.08	18.05	00:10:34:57.000
0.1	0.02	0.01	-0.08	18.05	00:10:35:12.000
0.1	0.02	0.01	-0.08	18.05	00:10:35:27.000
0.09	0.02	0.01	-0.08	12.13	00:10:35:42.000
0.09	0.03	0.01	-0.07	10.42	00:10:35:57.000
0.09	0.02	0.01	-0.08	10.02	00:10:36:12.000
0.09	0.02	0.02	-0.08	10.01	00:10:36:27.000
0.09	0.02	-0.01	-0.07	10.01	00:10:36:42.000
0.1	0.02	0.01	-0.08	10.01	THC Mid
0.1	0.03	0.01	-0.09	10.01	00:10:37:12.000
0.1	0.03	0.02	-0.08	10.01	00:10:37:27.000
0.11	0.03	0.01	-0.08	10.01	00:10:37:42.000
0.1	0.03	-0.01	-0.08	10.01	00:10:37:57.000
0.11	0.03	0	-0.09	9.07	00:10:38:12.000
0.11	0.03	0.01	-0.09	7.54	00:10:38:27.000
0.13	0.03	0.01	-0.07	5.93	00:10:38:42.000
0.18	0.03	0.01	-0.08	5.98	THC Low
0.32	0.02	0.01	-0.08	5.98	00:10:39:12.000
0.58	0.02	0.01	-0.08	5.98	00:10:39:27.000

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.09	0.02	0	-0.15	13.71	00:12:47:57.004
0.1	0.02	-0.01	-0.13	13.62	00:12:48:12.004
0.06	0.02	-0.01	-0.13	13.25	00:12:48:27.004
0.04	0.02	0	-0.15	13.01	00:12:48:42.004
0.04	0.01	-0.01	-0.15	12.8	00:12:48:57.004
0.04	0.01	0	-0.14	12.54	00:12:49:12.004
0.03	0.01	0	-0.14	12.33	00:12:49:27.004
0.03	0.02	0.04	-0.15	12.2	00:12:49:42.004
0.03	0.01	0.09	-0.15	12.1	00:12:49:57.004
0.03	0.01	0.1	-0.15	11.93	00:12:50:12.004
0.03	0.01	0.09	-0.15	11.75	00:12:50:27.004
0.03	0.01	0.09	-0.15	11.63	00:12:50:42.004
0.02	0.01	0.09	-0.15	11.51	00:12:50:57.004
0.03	0.01	0.1	-0.15	11.41	00:12:51:12.004
0.03	0.01	0.07	-0.15	11.35	00:12:51:27.004
0.02	0.01	0.07	-0.15	11.19	00:12:51:42.004
0.02	0.01	0.07	-0.15	11.11	00:12:51:57.004
0.02	0.01	0.07	-0.15	10.98	00:12:52:12.004
0.02	0.01	0.07	-0.15	10.92	00:12:52:27.004
0.02	0.01	0.08	-0.15	10.78	00:12:52:42.004
0.02	0.01	0.07	-0.15	10.71	00:12:52:57.004
0.02	0.01	0.07	-0.15	10.66	00:12:53:12.004
0.02	0.01	0.07	-0.15	10.66	00:12:53:27.004
0.02	0.01	0.07	-0.15	10.58	00:12:53:42.004
0.02	0.01	0.07	-0.14	10.46	00:12:53:57.004
0.02	0.01	0.06	-0.15	10.41	00:12:54:12.004
0.02	0.01	0.05	-0.15	10.34	00:12:54:27.004
0.02	0.01	0.05	-0.15	10.26	00:12:54:42.004
0.02	0.01	0.05	-0.15	10.27	00:12:54:57.004
0.01	0	0.05	-0.14	10.19	00:12:55:12.004
0.02	0	0.05	-0.15	10.16	00:12:55:27.004
0.02	0	0.05	-0.15	10.13	Zero
0.02	0	0.05	-0.16	10.11	00:12:55:57.004
0.02	0	0.05	-0.15	10.08	00:12:56:12.004
0.01	0.01	0.05	-0.15	10.04	00:12:56:27.004
0.02	0	0.05	-0.15	9.97	00:12:56:42.004
0.02	0	0.05	-0.15	9.92	00:12:56:57.004
0.03	0	0.05	-0.15	9.96	00:12:57:12.004
0.02	0.01	0.05	-0.15	9.85	00:12:57:27.004
0.02	0	0.05	-0.15	9.83	00:12:57:42.004
0.02	0	0.05	-0.15	9.78	00:12:57:57.004
0.01	0	0.05	-0.15	9.7	00:12:58:12.004

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.02	0	0.05	-0.15	9.68	00:12:58:27.004
0.02	0	0.05	-0.14	9.68	00:12:58:42.004
0.02	0	0.05	-0.14	9.67	00:12:58:57.004
0.01	0	0.05	-0.15	9.6	00:12:59:12.004
0.02	0	0.04	-0.15	9.59	00:12:59:27.004
0.02	0	0.05	-0.15	9.57	00:12:59:42.004
0.02	0	0.05	-0.15	9.53	00:12:59:57.004
0.01	0.01	0.03	-0.14	9.5	00:13:00:12.004
0.01	0	0.03	-0.12	9.48	00:13:00:27.004
0.02	0.01	0.04	-0.11	9.51	00:13:00:42.004
0.02	0	0.04	-0.09	9.45	00:13:00:57.004
0.01	0	0.03	-0.1	9.43	00:13:01:12.004
0.01	0	0.03	-0.09	9.4	00:13:01:27.004
0.01	0	0.03	-0.1	9.37	00:13:01:42.004
0.01	0	0.03	-0.11	9.36	00:13:01:57.004
0.01	0	0.03	-0.12	9.37	00:13:02:12.004
0.01	0	0.04	-0.11	9.29	00:13:02:27.004
0.02	0	0.03	-0.12	9.29	00:13:02:42.004
0.01	0	0.03	-0.12	9.27	00:13:02:57.004
0.01	0	0.03	-0.12	9.23	00:13:03:12.004
0.02	0	0.03	-0.12	9.22	00:13:03:27.004
0.02	0	0.03	-0.14	9.22	00:13:03:42.004
0.02	0	0.03	-0.12	9.21	00:13:03:57.004
0.01	0	0.03	-0.12	9.18	00:13:04:12.004
0.01	0	0.03	-0.13	9.14	00:13:04:27.004
0.01	0	0.03	-0.15	9.16	00:13:04:42.004
0.01	0	0.04	-0.14	9.11	00:13:04:57.004
0.01	0	0.03	-0.13	9.05	00:13:05:12.004
0.02	0	0.03	-0.12	9.07	00:13:05:27.004
0.01	0	0.03	-0.12	9.03	00:13:05:42.004
0.01	0	0.03	-0.12	8.99	00:13:05:57.004
0.01	0	0.03	-0.12	8.97	00:13:06:12.004
0.01	0	0.03	-0.13	8.96	00:13:06:27.004
0.02	0	0.03	-0.13	8.99	00:13:06:42.004
-0.01	0	0.03	-0.12	8.96	00:13:06:57.004
0	0	0.04	-0.13	8.94	00:13:07:12.004
0.03	0	0.04	-0.15	8.92	00:13:07:27.004
2.63	0.04	0.05	-0.15	8.93	00:13:07:42.004
11.29	0.01	0.12	-0.13	8.91	00:13:07:57.004
11.82	0	0.16	-0.15	8.88	00:13:08:12.004
11.84	0	0.07	-0.15	8.83	00:13:08:27.004
11.86	0	0.04	-0.15	8.83	00:13:08:42.004

J-22

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
11.86	0	0.04	-0.15	8.81	00:13:08:57.004
11.88	0	0.03	-0.15	8.82	00:13:09:12.004
11.87	0	0.03	-0.15	8.78	00:13:09:27.004
11.88	0	0.04	-0.15	8.74	00:13:09:42.004
11.88	0	0.03	-0.15	8.71	00:13:09:57.004
11.89	0	0.03	-0.15	8.71	00:13:10:12.004
11.88	0	0.03	-0.14	8.69	00:13:10:27.004
11.89	0	0.03	-0.15	8.67	00:13:10:42.004
11.87	0	0.04	-0.16	8.68	O2
11.87	0	0.03	-0.16	8.66	00:13:11:12.004
11.88	0	0.03	-0.15	8.65	00:13:11:27.004
7.47	2.87	0.03	-0.15	8.63	00:13:11:42.004
0.29	7.67	0.04	-0.16	8.61	00:13:11:57.004
0.05	7.81	0.06	-0.17	8.57	00:13:12:12.004
0.03	7.84	0.05	-0.15	8.58	00:13:12:27.004
0.01	7.86	0.03	-0.15	8.58	00:13:12:42.004
0.01	7.87	0.03	-0.14	8.54	00:13:12:57.004
0.01	7.88	0.04	-0.15	8.55	00:13:13:12.004
0	7.88	0.04	-0.16	8.54	00:13:13:27.004
0	7.89	0.03	-0.15	8.52	CO2
0	7.89	0.03	-0.17	8.5	00:13:13:57.004
-0.01	7.88	0.04	-0.17	8.48	00:13:14:12.004
-0.01	7.89	0.03	-0.15	8.49	00:13:14:27.004
-0.01	7.88	0.03	-0.16	8.48	00:13:14:42.004
-0.02	7.88	0.04	-0.16	8.47	00:13:14:57.004
-0.01	7.89	0.03	-0.16	8.45	00:13:15:12.004
-0.01	7.9	0.03	-0.15	8.43	00:13:15:27.004
0.12	5	0.05	-0.17	8.47	00:13:15:42.004
0.05	0.38	0.33	-0.17	8.44	00:13:15:57.004
0.02	0.13	2.18	-0.15	8.42	00:13:16:12.004
0.01	0.09	7.64	-0.16	8.41	00:13:16:27.004
0.01	0.06	8.86	-0.16	8.41	00:13:16:42.004
0.01	0.05	9.13	-0.17	8.42	00:13:16:57.004
0.01	0.04	9.37	-0.15	8.41	00:13:17:12.004
0.01	0.04	9.57	-0.15	8.4	00:13:17:27.004
0.01	0.03	9.68	-0.16	8.4	00:13:17:42.004
0.01	0.03	9.72	-0.16	8.38	00:13:17:57.004
0.01	0.02	9.74	-0.16	8.4	00:13:18:12.004
0.01	0.02	9.9	-0.17	8.4	00:13:18:27.004
0.01	0.02	9.98	-0.16	8.37	00:13:18:42.004
0.01	0.02	9.98	-0.15	8.36	00:13:18:57.004
0.01	0.02	9.98	-0.15	8.33	NOx

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0	0.02	9.95	-0.15	8.32	00:13:19:27.004
0.01	0.01	9.95	-0.15	8.31	00:13:19:42.004
0.01	0.01	9.95	-0.13	8.33	00:13:19:57.004
0.01	0.01	9.94	-0.13	8.31	00:13:20:12.004
0	0.02	9.92	-0.15	8.29	00:13:20:27.004
-0.02	0.02	9.9	-0.12	8.27	00:13:20:42.004
-0.02	0.02	9.9	-0.12	8.26	00:13:20:57.004
-0.02	0.02	8.82	-0.12	8.26	00:13:21:12.004
0.03	0.02	5.65	0.06	8.26	00:13:21:27.004
3.23	0.03	3.9	0.88	8.27	00:13:21:42.004
5.18	0.07	4.39	1.29	8.28	00:13:21:57.004
5.58	0.16	6.22	1.24	8.29	00:13:22:12.004
5.08	0.16	8.89	0.93	8.29	00:13:22:27.004
2.31	0.05	9.75	0.41	8.28	00:13:22:42.004
0.37	0.06	5.59	0.08	8.28	00:13:22:57.004
0.02	0.02	0.59	-0.06	8.3	00:13:23:12.004
-0.03	0.02	0.05	-0.09	8.26	CO Zero
-0.03	0.01	0.01	-0.09	8.3	00:13:23:42.004
-0.04	0.01	0.01	-0.09	8.3	00:13:23:57.004
-0.04	0.02	0.01	-0.1	8.27	00:13:24:12.004
-0.04	0.02	0.01	-0.11	8.27	00:13:24:27.004
-0.03	0.02	0.01	-0.11	8.24	00:13:24:42.004
-0.03	0.02	0.01	-0.11	8.22	00:13:24:57.004
-0.04	0.02	0.01	-0.11	8.21	00:13:25:12.004
-0.03	0.02	0.01	-0.11	8.22	00:13:25:27.004
-0.03	0.02	0.01	-0.11	8.2	00:13:25:42.004
-0.03	0.02	0.01	-0.11	8.19	00:13:25:57.004
-0.03	0.02	0.01	-0.12	8.18	00:13:26:12.004
-0.03	0.02	0.01	-0.11	8.17	00:13:26:27.004
-0.03	0.02	0.01	-0.11	8.16	00:13:26:42.004
-0.03	0.02	0.01	-0.12	8.14	00:13:26:57.004
-0.03	0.02	0.01	-0.12	8.14	00:13:27:12.004
-0.03	0.02	0.02	-0.11	8.15	00:13:27:27.004
-0.04	0.02	0.01	-0.1	8.17	00:13:27:42.004
-0.03	0.01	0.01	0.22	8.19	00:13:27:57.004
-0.03	0.01	0.01	1.35	8.15	00:13:28:12.004
-0.02	0.01	0.01	2.46	8.15	00:13:28:27.004
-0.01	0.01	0.01	3.85	8.16	00:13:28:42.004
0	0.01	0.01	5.45	8.14	00:13:28:57.004
-0.01	0.01	0.01	6.92	8.13	00:13:29:12.004
-0.03	0.01	0.01	8.1	8.15	00:13:29:27.004
-0.03	0.02	0.01	8.92	8.14	00:13:29:42.004

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
-0.03	0.01	0.01	9.35	8.14	00:13:29:57.004
-0.03	0.01	0.01	9.54	8.14	00:13:30:12.004
-0.03	0.01	0.01	9.61	8.14	00:13:30:27.004
-0.03	0.01	0.01	9.65	8.13	00:13:30:42.004
-0.03	0.01	0.01	9.89	8.13	00:13:30:57.004
-0.03	0.01	0.01	9.98	8.13	00:13:31:12.004
-0.04	0.01	0.01	10	8.12	00:13:31:27.004
-0.03	0.01	0.01	10	8.12	00:13:31:42.004
-0.03	0.01	0.01	10	8.13	00:13:31:57.004
-0.03	0	0.01	10	8.12	00:13:32:12.004
-0.03	0.01	0.01	10	8.12	00:13:32:27.004
-0.04	0.01	0.01	10	8.12	CO
-0.03	0.01	0.01	10	8.12	00:13:32:57.004
-0.03	0.01	0.01	10	8.12	00:13:33:12.004
-0.04	0.01	0.01	10	8.11	00:13:33:27.004
-0.02	0.01	0.01	9.98	8.21	00:13:33:42.004
-0.04	0.01	0.01	9.46	7.83	00:13:33:57.004
-0.04	0.01	0.01	7.55	7.62	00:13:34:12.004
-0.03	0.01	0.02	5.41	10.33	00:13:34:27.004
-0.03	0.01	0.01	3.35	13.1	00:13:34:42.004
-0.02	0.01	0.02	1.76	13.98	00:13:34:57.004
-0.02	0.01	0.01	0.7	13.2	00:13:35:12.004
-0.02	0.01	0.01	0.15	13.2	00:13:35:27.004
-0.02	0.01	0.02	-0.08	13.27	00:13:35:42.004
-0.02	0.01	0.02	-0.16	13.25	00:13:35:57.004
-0.02	0.01	0.01	-0.16	13.25	00:13:36:12.004
-0.02	0.02	0.01	-0.13	13.27	00:13:36:27.004
-0.02	0.02	0.01	-0.12	13.28	00:13:36:42.004
-0.02	0.02	0.01	-0.11	13.28	00:13:36:57.004
-0.02	0.02	0.01	-0.11	13.29	00:13:37:12.004
-0.01	0.02	0.02	-0.11	13.3	00:13:37:27.004
-0.02	0.02	0.01	-0.11	13.31	00:13:37:42.004
-0.02	0.02	0.01	-0.11	13.32	00:13:37:57.004
-0.01	0.03	0.01	-0.09	13.35	00:13:38:12.004
-0.01	0.02	0.02	-0.08	13.34	00:13:38:27.004
-0.01	0.03	0.01	-0.08	13.35	00:13:38:42.004
0	0.03	0.01	-0.07	13.36	00:13:38:57.004
-0.01	0.03	0.02	-0.06	13.36	00:13:39:12.004
0	0.03	0.02	-0.04	13.38	00:13:39:27.004
0	0.03	0	-0.04	13.38	00:13:39:42.004
0	0.03	0	-0.04	13.39	00:13:39:57.004
0	0.03	0.01	-0.04	13.39	00:13:40:12.004

J-25

GE-Energy & Environmental Research
 Post O2 Traverse Pre 8B-100-1
 15 sec Averaged data
 For 5-23-2001 @ 12:47:57.76

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0	0.03	0.01	-0.04	13.41	00:13:40:27.004
0.01	0.04	0	-0.05	13.41	00:13:40:42.004
0.01	0.04	0	-0.07	13.42	00:13:40:57.004
0	0.04	0.01	-0.07	13.41	00:13:41:12.004
0.01	0.04	0.01	-0.09	13.42	00:13:41:27.004
0.02	0.04	0.01	-0.09	13.43	00:13:41:42.004
0.01	0.04	0.01	-0.1	13.45	00:13:41:57.004
0.01	0.04	0.02	-0.11	13.45	00:13:42:12.004
0.02	0.04	0.01	-0.11	13.45	00:13:42:27.004
0.01	0.04	0.01	-0.11	13.49	00:13:42:42.004
0.01	0.05	0.01	-0.1	13.74	00:13:42:57.004
0.02	0.05	0.01	-0.12	13.71	00:13:43:12.004
0.02	0.05	0.01	-0.11	13.32	00:13:43:27.004
0.03	0.05	0.01	-0.12	13.5	00:13:43:42.004
0.03	0.05	0.01	-0.12	13.4	00:13:43:57.004
0.03	0.05	0.01	-0.12	13.32	00:13:44:12.004
0.03	0.05	0.01	-0.14	13.42	00:13:44:27.004
0.03	0.05	0.01	-0.14	13.37	00:13:44:42.004
0.03	0.05	0.01	-0.14	0.08	00:13:44:57.004
0.02	0.05	0.01	-0.15	0.01	00:13:45:12.004
0.01	0.05	0.01	-0.15	0.01	00:13:45:27.004
0	0.05	0.01	-0.16	0.01	THC Zero
0.02	0.05	0.01	-0.15	0.01	00:13:45:57.004
0.02	0.06	0.01	-0.15	0.04	00:13:46:12.004
0.01	0.06	0.02	-0.15	-0.08	00:13:46:27.004
0.03	0.06	0.01	-0.16	4.65	00:13:46:42.004
0.03	0.06	0	-0.15	9.32	00:13:46:57.004
0.04	0.06	0	-0.15	10.01	00:13:47:12.004
0.04	0.06	0.01	-0.15	10.01	00:13:47:27.004
0.04	0.06	0.01	-0.16	10.05	00:13:47:42.004
0.04	0.06	0.01	-0.15	10.07	THC
0.05	0.06	0.01	-0.16	10.07	00:13:48:12.004
0.05	0.06	0.02	-0.17	10.08	00:13:48:27.004

Energy & Environmental Research
 Run 8B-100-1
 1 minute averaged data
 For 5-23-2001 @ 14:15:18.37

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.52	4.15	9.82	0.12	-0.02	00:14:15:18.004
13.52	4.16	9.83	0.13	-0.02	00:14:16:18.004
13.52	4.15	9.82	0.13	-0.02	00:14:17:18.004
13.52	4.15	9.79	0.12	0	00:14:18:18.004
13.52	4.15	9.77	0.12	-0.04	00:14:19:18.004
13.52	4.15	9.74	0.12	0.04	00:14:20:18.004
13.52	4.15	9.72	0.12	0.05	00:14:21:18.004
13.52	4.15	9.72	0.12	0.09	00:14:22:18.004
13.52	4.15	9.73	0.12	0.09	00:14:23:18.004
13.52	4.15	9.67	0.12	0.09	00:14:24:18.004
13.51	4.15	9.69	0.12	0.05	00:14:25:18.004
13.52	4.15	9.75	0.12	0.06	00:14:26:18.004
13.52	4.15	9.77	0.12	-0.03	00:14:27:18.004
13.52	4.15	9.79	0.12	-0.02	00:14:28:18.004
13.52	4.15	9.75	0.12	-0.07	00:14:29:18.004
13.52	4.16	9.78	0.12	-0.07	00:14:30:18.004
13.52	4.15	9.71	0.12	-0.07	00:14:31:18.004
13.52	4.15	9.72	0.11	-0.03	00:14:32:18.004
13.52	4.15	9.73	0.11	0.01	00:14:33:18.004
13.51	4.15	9.69	0.12	0.06	00:14:34:18.004
13.51	4.15	9.66	0.12	-0.07	00:14:35:18.004
13.51	4.15	9.63	0.12	-0.07	00:14:36:18.004
13.51	4.15	9.7	0.12	-0.07	00:14:37:18.004
13.51	4.15	9.69	0.12	-0.07	00:14:38:18.004
13.51	4.15	9.66	0.12	-0.07	00:14:39:18.004
13.51	4.15	9.67	0.12	-0.07	00:14:40:18.004
13.51	4.15	9.63	0.12	-0.07	00:14:41:18.004
13.51	4.15	9.65	0.12	0	00:14:42:18.004
13.51	4.15	9.65	0.12	0.02	00:14:43:18.004
13.51	4.15	9.66	0.12	0.1	00:14:44:18.004
13.51	4.15	9.67	0.12	-0.3	00:14:45:18.004
13.51	4.15	9.7	0.12	-0.07	00:14:46:18.004
13.51	4.15	9.66	0.12	0.1	00:14:47:18.004
13.51	4.15	9.66	0.12	0.02	00:14:48:18.004
13.51	4.15	9.69	0.11	0.02	00:14:49:18.004
13.51	4.16	9.65	0.11	0.02	00:14:50:18.004
13.51	4.15	9.64	0.11	0.02	00:14:51:18.004
13.51	4.15	9.68	0.11	0.02	00:14:52:18.004
13.49	4.15	9.67	0.11	0.02	00:14:53:18.004
13.51	4.15	9.69	0.11	0.02	00:14:54:18.004
13.51	4.15	9.68	0.11	0.02	00:14:55:18.004
13.5	4.16	9.67	0.11	0.02	00:14:56:18.004

Energy & Environmental Research

Run 8B-100-1

1 minute averaged data

For 5-23-2001 @ 14:15:18.37

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.51	4.15	9.66	0.11	0.02	00:14:57:18.004
13.51	4.15	9.65	0.11	0.02	00:14:58:18.004
13.51	4.15	9.62	0.11	0.02	00:14:59:18.004
13.51	4.15	9.67	0.11	0.04	00:15:00:18.004
13.51	4.15	9.7	0.11	0.02	00:15:01:18.004
13.51	4.15	9.7	0.11	0.03	00:15:02:18.004
13.51	4.15	9.7	0.11	0	00:15:03:18.004
13.51	4.15	9.68	0.11	-0.03	00:15:04:18.004
13.51	4.15	9.68	0.11	-0.06	00:15:05:18.004
13.51	4.15	9.72	0.11	-0.09	00:15:06:18.004
13.5	4.15	9.73	0.11	-0.06	00:15:07:18.004
13.5	4.15	9.7	0.11	-0.06	00:15:08:18.004
13.51	4.15	9.7	0.11	-0.06	00:15:09:18.004
13.5	4.15	9.71	0.12	-0.06	00:15:10:18.004
13.51	4.15	9.61	0.12	-0.06	00:15:11:18.004
13.51	4.14	9.63	0.11	-0.04	00:15:12:18.004
13.52	4.14	9.75	0.12	-0.05	00:15:13:18.004
13.51	4.15	9.69	0.12	-0.07	00:15:14:18.004
13.51	4.15	9.66	0.12	-0.08	00:15:15:18.004
13.51	4.15	9.71	0.12	-0.06	00:15:16:18.004
13.51	4.15	9.69	0.12	-0.06	00:15:17:18.004
13.51	4.15	9.67	0.12	-0.06	00:15:18:18.004
13.51203	4.150313	9.698125	0.116563	-0.016563	Average

GE-Energy & Environmental Research
 Post 8B-100-1 Pre 8B-100-2
 15 sec Averaged data
 For 5-23-2001 @ 15:26:29.32

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0	0	0.16	-0.14	-0.19	00:15:26:29.004
0.01	0.01	0.16	-0.15	-0.11	00:15:26:44.004
0.01	0.01	0.15	-0.15	-0.27	00:15:26:59.004
0.01	0.01	0.14	-0.15	-0.32	00:15:27:14.004
0.01	0.01	0.14	-0.17	-0.41	00:15:27:29.004
0.01	0.01	0.14	-0.17	-0.36	00:15:27:44.004
0.01	0.01	0.14	-0.16	-0.07	00:15:27:59.004
0.01	0.01	0.14	-0.16	-0.14	00:15:28:14.004
0.01	0.01	0.13	-0.17	-0.17	00:15:28:29.004
0.01	0.01	0.11	-0.17	-0.2	00:15:28:44.004
0.01	0.01	0.11	-0.17	-0.26	00:15:28:59.004
0	0	0.11	-0.16	-0.25	Zero
0	0.01	0.11	-0.17	-0.03	00:15:29:29.004
0.01	0.01	0.11	-0.17	-0.02	00:15:29:44.004
0.28	0.02	0.12	-0.17	-0.07	00:15:29:59.004
9.42	0.06	0.11	-0.17	-0.15	00:15:30:14.004
11.71	0.01	0.11	-0.17	-0.15	00:15:30:29.004
11.79	0.01	0.17	-0.15	-0.21	00:15:30:44.004
11.81	0	0.12	-0.17	-0.26	00:15:30:59.004
11.82	0	0.09	-0.17	-0.3	00:15:31:14.004
11.82	0	0.09	-0.17	-0.31	00:15:31:29.004
11.83	0.01	0.07	-0.16	-0.35	00:15:31:44.004
11.85	0	0.07	-0.18	-0.41	00:15:31:59.004
11.85	0.01	0.07	-0.17	-0.44	00:15:32:14.004
11.85	0	0.07	-0.17	-0.48	00:15:32:29.004
11.85	0.01	0.07	-0.17	-0.44	00:15:32:44.004
11.87	0	0.07	-0.17	-0.42	00:15:32:59.004
11.99	0	0.07	-0.17	-0.48	00:15:33:14.004
11.99	0	0.07	-0.17	0.2	00:15:33:29.004
11.99	0	0.07	-0.17	0.17	00:15:33:44.004
11.99	0	0.07	-0.18	0.19	00:15:33:59.004
12	0	0.07	-0.19	0.2	O2
12	0	0.07	-0.17	0.21	00:15:34:29.004
11.99	0	0.07	-0.17	0.17	00:15:34:44.004
12	0	0.07	-0.17	0.22	00:15:34:59.004
12	0	0.07	-0.18	0.22	00:15:35:14.004
11.99	0	0.07	-0.18	0.19	00:15:35:29.004
11.99	0	0.07	-0.17	0.22	00:15:35:44.004
11.99	0	0.07	-0.17	0.23	00:15:35:59.004
11.99	0	0.08	-0.17	0.29	00:15:36:14.004
12	0	0.07	-0.17	0.29	00:15:36:29.004
12	0	0.07	-0.17	0.31	00:15:36:44.004

GE-Energy & Environmental Research
 Post 8B-100-1 Pre 8B-100-2
 15 sec Averaged data
 For 5-23-2001 @ 15:26:29.32

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
11.99	0	0.07	-0.17	0.35	00:15:36:59.004
11.99	0	0.05	-0.19	0.32	00:15:37:14.004
11.99	0	0.05	-0.17	0.38	00:15:37:29.004
11.98	0	0.05	-0.17	0.39	00:15:37:44.004
11.99	0	0.05	-0.17	0.45	00:15:37:59.004
11.99	0	0.05	-0.17	0.44	00:15:38:14.004
11.95	0	0.06	-0.17	0.5	00:15:38:29.004
4.16	4.74	0.07	-0.17	0.44	00:15:38:44.004
0.18	7.62	0.09	-0.17	0.43	00:15:38:59.004
0.07	7.72	0.09	-0.17	0.42	00:15:39:14.004
0.04	7.97	0.09	-0.19	0.44	00:15:39:29.004
0.03	8.01	0.09	-0.19	0.45	00:15:39:44.004
0.02	8.02	0.09	-0.19	0.4	00:15:39:59.004
0.01	8.03	0.09	-0.17	0.41	00:15:40:14.004
0.01	8.04	0.09	-0.17	0.43	CO2
0	8.04	0.09	-0.17	0.44	00:15:40:44.004
0	8.04	0.09	-0.17	0.47	00:15:40:59.004
0	8.06	0.09	-0.17	0.52	00:15:41:14.004
0.03	7.9	0.09	-0.17	0.41	00:15:41:29.004
0.18	2.05	0.26	-0.17	0.49	00:15:41:44.004
0.04	0.25	1.13	-0.18	0.51	00:15:41:59.004
0.01	0.13	4.97	-0.17	0.51	00:15:42:14.004
0.01	0.09	8.55	-0.18	0.38	00:15:42:29.004
0.01	0.07	9.25	-0.19	0.37	00:15:42:44.004
0.01	0.06	9.4	-0.18	0.35	00:15:42:59.004
0.01	0.05	9.5	-0.17	0.28	00:15:43:14.004
0.01	0.04	9.67	-0.19	0.33	00:15:43:29.004
0	0.04	9.78	-0.17	0.31	00:15:43:44.004
0.01	0.03	9.86	-0.17	0.36	00:15:43:59.004
0.01	0.03	9.89	-0.19	0.33	00:15:44:14.004
0.02	0.02	9.91	-0.17	0.3	00:15:44:29.004
0.01	0.02	9.91	-0.19	0.3	00:15:44:44.004
0.01	0.02	9.91	-0.19	0.31	00:15:44:59.004
0	0.02	9.91	-0.19	0.33	NOx
0	0.02	9.91	-0.19	0.35	00:15:45:29.004
0	0.02	9.92	-0.19	0.03	00:15:45:44.004
0	0.01	9.98	-0.19	0	00:15:45:59.004
0	0.01	9.99	-0.19	0.01	00:15:46:14.004
0.01	0.01	9.99	-0.19	-0.01	00:15:46:29.004
0.01	0.01	9.97	-0.19	0.02	00:15:46:44.004
0	0.01	9.97	-0.19	-0.01	00:15:46:59.004
0	0.01	9.97	-0.18	0.02	00:15:47:14.004

GE-Energy & Environmental Research
 Post 8B-100-1 Pre 8B-100-2
 15 sec Averaged data
 For 5-23-2001 @ 15:26:29.32

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
0.01	0.01	9.97	-0.19	0.05	00:15:47:29.004
0	0.01	9.95	-0.19	0.02	00:15:47:44.004
0	0.01	9.97	-0.18	0.02	00:15:47:59.004
0	0.01	9.95	-0.19	0.02	00:15:48:14.004
0	0.01	9.94	-0.19	0.02	00:15:48:29.004
-0.02	0.01	9.94	-0.18	0.02	00:15:48:44.004
-0.02	0.01	9.91	-0.01	0.02	00:15:48:59.004
-0.01	0.02	9.8	0.34	0.02	00:15:49:14.004
-0.01	0.02	7.89	0.51	-0.02	00:15:49:29.004
-0.02	0.02	4.87	0.64	-0.04	00:15:49:44.004
-0.01	0.03	1.3	0.71	-0.04	00:15:49:59.004
0	0.06	0.01	0.73	-0.07	00:15:50:14.004
1.14	1.7	0.01	1.72	-0.08	00:15:50:29.004
7.1	3.47	0.01	3.32	0.02	00:15:50:44.004
10.25	1.92	0.01	4.75	0.08	00:15:50:59.004
6.87	0.54	0.02	5.28	0.02	00:15:51:14.004
2.34	0.2	0.01	4.86	0.02	00:15:51:29.004
0.67	0.11	0.01	4.36	0.02	00:15:51:44.004
0.21	0.07	0.01	4.45	0.02	00:15:51:59.004
0.07	0.06	0.01	5.24	0.02	00:15:52:14.004
0.02	0.05	0.01	6.52	0.02	00:15:52:29.004
0	0.04	0.01	7.7	0.02	00:15:52:44.004
-0.01	0.04	0.01	8.55	0.02	00:15:52:59.004
-0.01	0.03	0.01	9.01	0.02	00:15:53:14.004
-0.02	0.03	0.01	9.28	0.02	00:15:53:29.004
-0.02	0.03	0.01	9.43	0.02	00:15:53:44.004
-0.02	0.03	0.01	9.51	0.03	00:15:53:59.004
-0.02	0.02	0.01	9.57	0.01	00:15:54:14.004
-0.02	0.02	0.01	9.6	0	00:15:54:29.004
-0.02	0.03	0.01	9.62	-0.01	00:15:54:44.004
-0.03	0.03	0.01	9.67	0.02	00:15:54:59.004
-0.03	0.02	0.01	9.72	0.03	00:15:55:14.004
-0.03	0.02	0.01	9.76	0.03	00:15:55:29.004
-0.03	0.02	0.01	9.8	0.03	00:15:55:44.004
-0.03	0.02	0.01	9.84	0.03	00:15:55:59.004
-0.03	0.02	0.01	9.88	0.03	00:15:56:14.004
-0.03	0.02	0.01	9.88	0.02	00:15:56:29.004
-0.04	0.02	0.01	9.89	-0.02	00:15:56:44.004
-0.03	0.02	0.01	9.91	-0.01	00:15:56:59.004
-0.04	0.02	0.01	9.92	-0.04	00:15:57:14.004
-0.03	0.02	0.01	9.93	-0.06	00:15:57:29.004
-0.04	0.01	0.01	9.93	-0.09	00:15:57:44.004

GE-Energy & Environmental Research
 Post 8B-100-1 Pre 8B-100-2
 15 sec Averaged data
 For 5-23-2001 @ 15:26:29.32

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
-0.03	0.01	0.01	9.94	-0.01	00:15:57:59.004
-0.04	0.01	0.01	9.96	-0.01	00:15:58:14.004
-0.04	0.01	0.01	9.94	-0.01	00:15:58:29.004
-0.04	0.01	0.01	9.93	-0.01	00:15:58:44.004
-0.04	0.01	0.01	9.94	-0.01	00:15:58:59.004
-0.04	0.01	0.01	9.94	-0.01	00:15:59:14.004
-0.04	0.01	0.01	9.94	-0.01	CO
-0.04	0.01	0.01	9.94	-0.01	00:15:59:44.004
-0.04	0.01	0.01	9.94	-0.01	00:15:59:59.004
-0.04	0.01	0.01	9.94	-0.01	00:16:00:14.004
-0.04	0.02	0.01	9.93	0.02	00:16:00:29.004
-0.05	0.01	0.01	9.93	0.02	00:16:00:44.004
-0.05	0.01	0.01	9.94	0.02	00:16:00:59.004
-0.04	0.01	0.01	9.94	0.02	00:16:01:14.004
-0.05	0.01	0.01	9.94	0.02	00:16:01:29.004
-0.05	0.01	0.01	9.94	0.02	00:16:01:44.004
-0.05	0	0.01	9.93	0.02	00:16:01:59.004
-0.04	0.01	0.02	9.92	0.02	00:16:02:14.004
-0.05	0.01	0.01	9.93	0.02	00:16:02:29.004
-0.05	0.01	0.01	9.93	0.02	00:16:02:44.004
-0.05	0.01	0.01	9.92	0.02	00:16:02:59.004
-0.05	0.01	0.01	9.92	0.02	00:16:03:14.004
-0.04	0.01	0.01	9.92	0.02	00:16:03:29.004
-0.04	0.02	0.01	9.93	0.02	00:16:03:44.004
-0.03	0.01	0.01	9.94	4.63	00:16:03:59.004
-0.03	0.02	0.01	9.92	6.69	00:16:04:14.004
-0.02	0.02	0.01	9.91	9.99	00:16:04:29.004
-0.03	0.02	0.01	9.92	9.98	00:16:04:44.004
-0.03	0.02	0.01	9.92	9.96	00:16:04:59.004
-0.02	0.02	0.01	9.91	9.99	00:16:05:14.004
-0.02	0.02	0.01	9.9	10.09	00:16:05:29.004
-0.01	0.02	0.01	9.9	10.02	00:16:05:44.004
-0.02	0.02	0.01	9.9	10	THC
-0.01	0.02	0.01	9.73	10	00:16:06:14.004
-0.01	0.03	0.02	8.47	10	00:16:06:29.004

Energy & Environmental Research
 Run 8B-100-2
 1 minute averaged data
 For 5-23-2001 @ 18:18:19.93

O2 Percent	CO2 Percent	NO2 ppmv	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.66	4.25	0.7	9.72	0.17	0	00:18:18:19.000
13.63	4.25	0.7	9.71	0.17	-0.01	00:18:19:19.000
13.63	4.25	0.69	9.67	0.17	-0.06	00:18:20:19.000
13.63	4.25	0.68	9.63	0.17	0.01	00:18:21:19.000
13.63	4.25	0.69	9.66	0.17	0.03	00:18:22:19.000
13.63	4.25	0.69	9.68	0.17	0.02	00:18:23:19.000
13.64	4.25	0.74	9.72	0.18	0.02	00:18:24:19.000
13.67	4.25	0.71	9.7	0.17	-0.12	00:18:25:19.000
13.64	4.25	0.72	9.69	0.17	0.02	00:18:26:19.000
13.64	4.25	0.67	9.65	0.17	0.01	00:18:27:19.000
13.63	4.25	0.68	9.66	0.17	0.01	00:18:28:19.000
13.64	4.25	0.71	9.68	0.17	0.01	00:18:29:19.000
13.64	4.25	0.71	9.65	0.17	0	00:18:30:19.000
13.64	4.25	0.73	9.71	0.17	0.01	00:18:31:19.000
13.63	4.25	0.7	9.68	0.17	0	00:18:32:19.000
13.64	4.24	0.69	9.69	0.17	0	00:18:33:19.000
13.64	4.24	0.7	9.7	0.17	-0.01	00:18:34:19.000
13.64	4.24	0.68	9.68	0.17	-0.01	00:18:35:19.000
13.64	4.24	0.68	9.71	0.17	-0.02	00:18:36:19.000
13.64	4.25	0.72	9.7	0.17	-0.02	00:18:37:19.000
13.64	4.25	0.7	9.73	0.17	-0.03	00:18:38:19.000
13.64	4.25	0.71	9.71	0.17	-0.03	00:18:39:19.000
13.64	4.25	0.7	9.7	0.16	-0.03	00:18:40:19.000
13.64	4.25	0.7	9.7	0.16	-0.03	00:18:41:19.000
13.64	4.25	0.71	9.73	0.16	-0.03	00:18:42:19.000
13.63	4.25	0.7	9.72	0.17	-0.03	00:18:43:19.000
13.63	4.25	0.72	9.69	0.16	-0.05	00:18:44:19.000
13.64	4.24	0.72	9.7	0.16	-0.05	00:18:45:19.000
13.64	4.24	0.73	9.69	0.16	-0.05	00:18:46:19.000
13.64	4.25	0.72	9.73	0.16	-0.05	00:18:47:19.000
13.64	4.25	0.74	9.76	0.16	-0.06	00:18:48:19.000
13.64	4.24	0.69	9.71	0.16	-0.07	00:18:49:19.000
13.64	4.24	0.7	9.72	0.16	-0.08	00:18:50:19.000
13.64	4.25	0.7	9.71	0.16	-0.09	00:18:51:19.000
13.64	4.25	0.72	9.7	0.16	-0.09	00:18:52:19.000
13.64	4.24	0.72	9.73	0.16	-0.1	00:18:53:19.000
13.64	4.25	0.73	9.71	0.16	-0.11	00:18:54:19.000
13.63	4.25	0.77	9.75	0.16	-0.11	00:18:55:19.000
13.64	4.25	0.74	9.75	0.16	-0.12	00:18:56:19.000
13.64	4.25	0.74	9.79	0.16	-0.13	00:18:57:19.000
13.64	4.25	0.75	9.78	0.17	-0.13	00:18:58:19.000
13.64	4.25	0.72	9.77	0.17	-0.15	00:18:59:19.000

Energy & Environmental Research
 Run 8B-100-2
 1 minute averaged data
 For 5-23-2001 @ 18:18:19.93

O2 Percent	CO2 Percent	NO2 ppmv	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.63	4.25	0.69	9.77	0.17	-0.16	00:19:00:19.000
13.63	4.25	0.69	9.75	0.17	-0.17	00:19:01:19.000
13.63	4.25	0.68	9.77	0.17	-0.17	00:19:02:19.000
13.63	4.25	0.68	9.76	0.17	-0.17	00:19:03:19.000
13.64	4.25	0.7	9.77	0.17	0	00:19:04:19.000
13.63	4.25	0.72	9.8	0.17	0.01	00:19:05:19.000
13.64	4.25	0.75	9.85	0.18	0.01	00:19:06:19.000
13.64	4.25	0.74	9.82	0.18	0.01	00:19:07:19.000
13.64	4.25	0.75	9.8	0.18	0.01	00:19:08:19.000
13.64	4.25	0.74	9.83	0.19	0	00:19:09:19.000
13.64	4.25	0.73	9.82	0.19	0	00:19:10:19.000
13.65	4.25	0.72	9.81	0.19	0	00:19:11:19.000
13.65	4.25	0.76	9.82	0.19	0	00:19:12:19.000
13.65	4.25	0.69	9.77	0.19	0	00:19:13:19.000
13.65	4.25	0.67	9.77	0.19	0	00:19:14:19.000
13.65	4.26	0.71	9.81	0.19	0	00:19:15:19.000
13.65	4.25	0.71	9.85	0.2	0.01	00:19:16:19.000
13.64	4.25	0.7	9.87	0.2	0.01	00:19:17:19.000
13.65	4.26	0.73	9.86	0.2	0.01	00:19:18:19.000
13.64	4.25	0.71	9.74	0.17	-0.04	Average

GE-Energy & Environmental Research
 Post 8B-100-2 Pre 8B-100-3
 15 sec Averaged data
 For 5-23-2001 @ 19:19:41.86

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.64	4.25	9.89	0.39	0.03	00:19:19:41.000
12.84	3.97	9.89	0.4	0	00:19:19:56.000
3.44	0.57	9.81	0.4	-0.01	00:19:20:11.000
0.12	0.06	8.85	0.39	0.01	00:19:20:26.000
0.04	0.03	3.78	0.39	0	00:19:20:41.000
0.03	0.02	0.5	0.39	0	00:19:20:56.000
0.02	0.02	0.4	0.39	-0.01	00:19:21:11.000
0.01	0.01	0.33	0.39	0	00:19:21:26.000
0.01	0.01	0.3	0.39	0	00:19:21:41.000
0	0.01	0.27	0.39	0.01	00:19:21:56.000
0	0.01	0.26	0.39	0	Zero
0	0.01	0.24	0.39	0	00:19:22:26.000
-0.01	0.01	0.22	0.4	0	00:19:22:41.000
0	0.01	0.22	0.39	0	00:19:22:56.000
0	0.01	0.2	0.39	0	00:19:23:11.000
0.01	0	0.2	0.39	0.02	00:19:23:26.000
-0.01	0.01	0.2	0.39	0.01	00:19:23:41.000
0	0.01	0.17	0.39	0.01	00:19:23:56.000
0.01	0.01	0.18	0.39	0	00:19:24:11.000
8.25	0.1	0.25	0.39	0	00:19:24:26.000
11.83	0.01	0.56	0.39	0	00:19:24:41.000
11.91	0.01	0.49	0.39	0	00:19:24:56.000
11.93	0	0.18	0.39	0.01	00:19:25:11.000
11.93	0	0.13	0.39	-0.02	00:19:25:26.000
11.94	0	0.11	0.39	-0.01	00:19:25:41.000
11.95	0	0.12	0.39	-0.01	O2
11.95	0	0.11	0.39	-0.01	00:19:26:11.000
11.94	0	0.11	0.39	0	00:19:26:26.000
11.95	0	0.09	0.4	0	00:19:26:41.000
11.96	0	0.09	0.39	0	00:19:26:56.000
7.3	3.22	0.11	0.39	-0.01	00:19:27:11.000
0.23	7.87	0.11	0.39	0	00:19:27:26.000
0.03	7.99	0.09	0.39	0.01	00:19:27:41.000
0.01	8.02	0.11	0.39	0	00:19:27:56.000
0	8.04	0.1	0.39	0	00:19:28:11.000
-0.01	8.05	0.09	0.39	0	00:19:28:26.000
-0.01	8.05	0.09	0.39	0	00:19:28:41.000
-0.02	8.06	0.09	0.39	-0.01	00:19:28:56.000
-0.02	8.04	0.09	0.39	0	00:19:29:11.000
-0.03	8.01	0.09	0.39	-0.01	CO2
-0.03	8.01	0.1	0.39	0	00:19:29:41.000
-0.02	8.02	0.09	0.39	-0.01	00:19:29:56.000

GE-Energy & Environmental Research
 Post 8B-100-2 Pre 8B-100-3
 15 sec Averaged data
 For 5-23-2001 @ 19:19:41.86

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
0.05	3.81	0.1	0.39	0	00:19:30:11.000
0.01	0.25	0.82	0.39	-0.01	00:19:30:26.000
-0.01	0.11	5.59	0.39	0	00:19:30:41.000
-0.01	0.07	9	0.39	0	00:19:30:56.000
-0.01	0.06	9.66	0.39	-0.01	00:19:31:11.000
-0.01	0.04	9.89	0.39	0	00:19:31:26.000
-0.01	0.04	10.01	0.38	0	00:19:31:41.000
-0.01	0.03	10.09	0.39	-0.01	00:19:31:56.000
-0.01	0.03	10.09	0.39	0.04	00:19:32:11.000
-0.01	0.02	10.09	0.39	0	00:19:32:26.000
-0.01	0.02	10.09	0.4	0	00:19:32:41.000
-0.01	0.02	10.05	0.39	0	00:19:32:56.000
-0.01	0.01	10.03	0.4	0	NOx
-0.01	0.01	10.02	0.39	0	00:19:33:26.000
-0.01	0.01	10.02	0.38	0	00:19:33:41.000
-0.01	0.01	10	0.4	0.01	00:19:33:56.000
-0.02	0.01	10.01	0.4	0	00:19:34:11.000
-0.02	0.01	9.99	0.39	0	00:19:34:26.000
-0.03	0.01	9.99	0.39	0.01	00:19:34:41.000
0.01	0.02	10.11	0.39	-0.01	00:19:34:56.000
0	0.01	8.08	0.4	-0.01	00:19:35:11.000
-0.01	0.01	1.34	0.37	0.04	00:19:35:26.000
-0.01	0	0.05	0.37	0.01	00:19:35:41.000
6.56	2.16	0.01	0.39	0.01	00:19:35:56.000
13.49	4.16	0.01	0.39	0	00:19:36:11.000
13.62	4.2	0.01	0.39	5.17	00:19:36:26.000
13.63	4.2	0.02	0.43	-0.63	00:19:36:41.000
13.63	4.22	0.01	0.36	0.03	00:19:36:56.000
13.64	4.22	0.01	0.26	0.01	00:19:37:11.000
13.64	4.22	0.01	0.16	-0.02	00:19:37:26.000
13.65	4.22	0.01	0.09	-0.04	00:19:37:41.000
13.65	4.23	0.01	0.03	-0.05	00:19:37:56.000
13.65	4.22	0.01	0.02	-0.06	00:19:38:11.000
13.65	4.22	0.01	0.02	-0.05	00:19:38:26.000
13.64	4.23	0.02	0.03	-0.07	00:19:38:41.000
13.65	4.23	0.02	0.03	-0.06	CO Zero
13.64	4.23	0.01	0.03	-0.07	00:19:39:11.000
13.65	4.22	0.01	0.04	-0.07	00:19:39:26.000
13.65	4.23	0.01	0.04	-0.07	00:19:39:41.000
13.65	4.23	0.02	0.02	-0.08	00:19:39:56.000
13.65	4.23	0.01	0.02	-0.08	00:19:40:11.000
13.65	4.24	0.01	0.02	-0.08	00:19:40:26.000

GE-Energy & Environmental Research
 Post 8B-100-2 Pre 8B-100-3
 15 sec Averaged data
 For 5-23-2001 @ 19:19:41.86

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.65	4.23	0.01	0.04	-0.07	00:19:40:41.000
13.65	4.23	0.01	0.02	-0.06	00:19:40:56.000
13.65	4.24	0.02	0.03	-0.07	00:19:41:11.000
13.65	4.24	0.02	0.22	-0.04	00:19:41:26.000
13.65	4.23	0.01	1.1	-0.05	00:19:41:41.000
13.65	4.24	0.01	2.3	-0.06	00:19:41:56.000
13.65	4.24	0.01	3.4	-0.05	00:19:42:11.000
13.65	4.25	0.01	5.2	-0.05	00:19:42:26.000
13.65	4.24	0.01	6.66	-0.05	00:19:42:41.000
13.66	4.24	0.01	8.03	-0.05	00:19:42:56.000
13.66	4.24	0.01	8.99	-0.05	00:19:43:11.000
13.65	4.24	0.02	9.64	-0.04	00:19:43:26.000
13.65	4.24	0.01	9.88	-0.03	00:19:43:41.000
13.65	4.24	0.01	10.01	-0.04	00:19:43:56.000
13.65	4.25	0.01	10.06	-0.04	00:19:44:11.000
13.65	4.25	0.01	10.09	-0.04	00:19:44:26.000
13.65	4.25	0.01	10.09	-0.04	00:19:44:41.000
13.64	4.25	0.01	10.11	-0.04	00:19:44:56.000
13.65	4.25	0.01	10.13	-0.04	00:19:45:11.000
13.65	4.25	0.01	10.13	0.16	00:19:45:26.000
13.65	4.24	0.01	10.14	-0.04	00:19:45:41.000
13.65	4.24	0.01	10.17	-0.03	00:19:45:56.000
13.65	4.24	0.01	10.17	-0.03	00:19:46:11.000
13.64	4.24	0.02	10.15	-0.03	00:19:46:26.000
13.66	4.24	0.01	10.16	-0.03	00:19:46:41.000
13.65	4.24	0.01	10.18	-0.02	00:19:46:56.000
13.65	4.24	0.02	10.15	-0.02	00:19:47:11.000
13.65	4.24	0.01	10.15	-0.01	00:19:47:26.000
13.65	4.24	0.01	10.18	-0.01	00:19:47:41.000
13.65	4.24	0.01	10.18	-0.02	NOx Zero
13.64	4.24	0.01	10.15	-0.02	00:19:48:11.000
13.64	4.24	0.01	10.15	-0.02	CO
13.65	4.25	0.01	10.15	-0.02	00:19:48:41.000
13.65	4.24	0.01	10.15	0.03	00:19:48:56.000
13.65	4.25	0.01	10.15	-0.02	00:19:49:11.000
13.65	4.24	0.01	10.15	0.17	00:19:49:26.000
13.67	4.24	0.01	10.15	9.24	00:19:49:41.000
13.67	4.24	0.01	9.6	10	00:19:49:56.000
13.68	4.25	0.01	7.58	10.05	00:19:50:11.000
13.66	4.25	0.01	5.01	10.08	00:19:50:26.000
13.67	4.25	0.01	3.07	10.08	00:19:50:41.000
13.66	4.25	0.01	1.26	10.09	00:19:50:56.000

GE-Energy & Environmental Research
 Post 8B-100-2 Pre 8B-100-3
 15 sec Averaged data
 For 5-23-2001 @ 19:19:41.86

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.67	4.25	0.01	0.53	10.09	THC
13.67	4.25	0.01	0.18	10.09	00:19:51:26.000
13.66	4.25	0.01	0.11	10.09	00:19:51:41.000
13.67	4.25	0.02	0.08	10.08	00:19:51:56.000
13.68	4.25	0.01	0.08	10.08	00:19:52:11.000
13.69	4.25	0.01	0.08	9.11	00:19:52:26.000
13.64	4.25	0.01	0.08	0.32	00:19:52:41.000
13.64	4.25	0.01	0.1	0.08	00:19:52:56.000
13.64	4.25	0.01	0.09	0.03	00:19:53:11.000
13.64	4.25	0.01	0.09	0.01	00:19:53:26.000
13.64	4.25	0.01	0.08	0.01	00:19:53:41.000
13.64	4.25	0.01	0.09	0.59	00:19:53:56.000
13.65	4.25	0.02	0.08	0.93	00:19:54:11.000

Energy & Environmental Research
 Run 8B-100-3
 1 minute averaged data
 For 5-23-2001 @ 19:54:56.44

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.63	4.25	9.75	0.16	0.01	00:19:54:56.000
13.64	4.25	9.71	0.18	0.01	00:19:55:56.000
13.64	4.25	9.75	0.19	0.07	00:19:56:56.000
13.64	4.25	9.76	0.2	0.08	00:19:57:56.000
13.64	4.24	9.76	0.19	0.09	00:19:58:56.000
13.64	4.24	9.8	0.19	0.11	00:19:59:56.000
13.64	4.24	9.8	0.2	0.12	00:20:00:56.000
13.64	4.25	9.8	0.19	0.12	00:20:01:56.000
13.64	4.25	9.8	0.2	0.11	00:20:02:56.000
13.64	4.25	9.8	0.2	-0.1	00:20:03:56.000
13.65	4.25	9.8	0.19	-0.11	00:20:04:56.000
13.64	4.25	9.8	0.19	-0.12	00:20:05:56.000
13.64	4.25	9.8	0.19	-0.13	00:20:06:56.000
13.65	4.25	9.8	0.19	-0.14	00:20:07:56.000
13.64	4.25	9.8	0.19	-0.15	00:20:08:56.000
13.64	4.25	9.76	0.19	-0.16	00:20:09:56.000
13.64	4.24	9.77	0.19	0	00:20:10:56.000
13.64	4.24	9.79	0.19	0.02	00:20:11:56.000
13.64	4.25	9.8	0.19	0.02	00:20:12:56.000
13.64	4.25	9.8	0.18	0.01	00:20:13:56.000
13.65	4.25	9.8	0.18	0	00:20:14:56.000
13.65	4.25	9.8	0.19	-0.01	00:20:15:56.000
13.64	4.25	9.8	0.18	-0.02	00:20:16:56.000
13.65	4.25	9.79	0.19	-0.02	00:20:17:56.000
13.65	4.25	9.79	0.19	-0.02	00:20:18:56.000
13.64	4.25	9.8	0.19	-0.02	00:20:19:56.000
13.64	4.25	9.8	0.19	-0.03	00:20:20:56.000
13.65	4.24	9.8	0.19	-0.03	00:20:21:56.000
13.65	4.25	9.8	0.19	-0.05	00:20:22:56.000
13.65	4.25	9.78	0.19	-0.04	00:20:23:56.000
13.65	4.25	9.79	0.19	-0.04	00:20:24:56.000
13.65	4.25	9.76	0.19	-0.04	00:20:25:56.000
13.65	4.25	9.78	0.19	-0.05	00:20:26:56.000
13.64	4.25	9.75	0.19	-0.05	00:20:27:56.000
13.64	4.25	9.76	0.19	-0.05	00:20:28:56.000
13.65	4.25	9.74	0.19	-0.05	00:20:29:56.000
13.64	4.25	9.71	0.19	-0.06	00:20:30:56.000
13.64	4.25	9.76	0.2	-0.05	00:20:31:56.000
13.64	4.25	9.76	0.2	-0.06	00:20:32:56.000
13.64	4.25	9.79	0.2	-0.06	00:20:33:56.000
13.64	4.25	9.8	0.2	-0.06	00:20:34:56.000
13.65	4.25	9.78	0.2	-0.06	00:20:35:56.000

Energy & Environmental Research
 Run 8B-100-3
 1 minute averaged data
 For 5-23-2001 @ 19:54:56.44

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.65	4.25	9.75	0.2	-0.05	00:20:36:56.000
13.65	4.25	9.76	0.2	-0.05	00:20:37:56.000
13.64	4.25	9.8	0.2	-0.05	00:20:38:56.000
13.65	4.25	9.76	0.2	-0.05	00:20:39:56.000
13.65	4.25	9.78	0.19	-0.06	00:20:40:56.000
13.64	4.25	9.77	0.19	-0.07	00:20:41:56.000
13.64	4.25	9.76	0.19	-0.07	00:20:42:56.000
13.64	4.25	9.75	0.19	-0.08	00:20:43:56.000
13.65	4.25	9.76	0.19	-0.08	00:20:44:56.000
13.65	4.25	9.78	0.19	-0.07	00:20:45:56.000
13.65	4.25	9.76	0.19	-0.07	00:20:46:56.000
13.64	4.25	9.75	0.19	-0.07	00:20:47:56.000
13.64	4.25	9.75	0.19	-0.08	00:20:48:56.000
13.64	4.25	9.76	0.19	-0.08	00:20:49:56.000
13.64	4.25	9.78	0.19	-0.08	00:20:50:56.000
13.64	4.25	9.78	0.19	-0.08	00:20:51:56.000
13.64	4.24	9.79	0.19	-0.09	00:20:52:56.000
13.64	4.25	9.8	0.19	-0.08	00:20:53:56.000
13.64	4.25	9.74	0.19	-0.09	00:20:54:56.000
13.64	4.25	9.78	0.19	-0.04	Average

GE-Energy & Environmental Research
 Post 8B-100-3 Pre M5 O2-CO2-1
 15 sec Averaged data
 For 5-23-2001 @ 21:23:41.41

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13	4.2	4.74	0.41	0.01	00:21:23:41.000
12.58	3.97	6.84	0.41	0.01	00:21:23:56.000
5.28	0.92	9.47	0.41	0.01	00:21:24:11.000
0.27	0.05	8.32	0.4	0	00:21:24:26.000
0.01	0.02	2.05	0.39	0.01	00:21:24:41.000
0	0.01	0.33	0.4	0.01	00:21:24:56.000
0	0.01	0.24	0.4	0.01	00:21:25:11.000
0	0.01	0.22	0.4	0	00:21:25:26.000
-0.01	0	0.21	0.4	0	00:21:25:41.000
-0.01	0	0.19	0.4	0.01	00:21:25:56.000
-0.01	0	0.19	0.39	0.01	00:21:26:11.000
-0.01	0	0.18	0.39	0.01	00:21:26:26.000
-0.01	0	0.17	0.39	0.01	00:21:26:41.000
-0.01	0	0.16	0.39	0	Zero
-0.01	0	0.15	0.39	0.01	00:21:27:11.000
-0.01	0	0.14	0.39	0.01	00:21:27:26.000
-0.01	0	0.13	0.39	0	00:21:27:41.000
-0.01	0	0.13	0.39	0	00:21:27:56.000
-0.01	0	0.13	0.39	0	00:21:28:11.000
-0.01	0	0.11	0.39	0	00:21:28:26.000
0.26	0.01	0.11	0.39	0	00:21:28:41.000
10.03	0.03	0.12	0.39	0	00:21:28:56.000
11.88	0	0.13	0.39	0	00:21:29:11.000
11.93	0	0.17	0.39	0.01	00:21:29:26.000
11.94	0	0.12	0.38	0	00:21:29:41.000
11.95	0	0.09	0.39	0	00:21:29:56.000
11.96	0	0.09	0.39	0	00:21:30:11.000
11.96	0	0.09	0.38	0	00:21:30:26.000
11.96	0	0.07	0.39	0	00:21:30:41.000
11.97	0	0.07	0.39	-0.01	O2
11.97	0	0.07	0.39	-0.01	00:21:31:11.000
11.98	0	0.07	0.37	0	00:21:31:26.000
11.97	-0.01	0.07	0.39	0	00:21:31:41.000
11.97	-0.01	0.07	0.39	0	00:21:31:56.000
11.98	-0.01	0.07	0.39	-0.01	00:21:32:11.000
8.64	2.34	0.07	0.39	-0.01	00:21:32:26.000
0.36	7.8	0.05	0.39	-0.01	00:21:32:41.000
0.03	7.95	0.07	0.39	0	00:21:32:56.000
0.01	7.99	0.07	0.39	-0.01	00:21:33:11.000
0	8.01	0.07	0.39	-0.01	00:21:33:26.000
-0.01	8.02	0.07	0.39	-0.01	00:21:33:41.000
-0.01	8.03	0.07	0.39	-0.02	00:21:33:56.000

GE-Energy & Environmental Research
 Post 8B-100-3 Pre M5 O2-CO2-1
 15 sec Averaged data
 For 5-23-2001 @ 21:23:41.41

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
-0.02	8.03	0.07	0.39	0	00:21:34:11.000
-0.02	8.04	0.07	0.39	-0.02	CO2
-0.03	8.04	0.07	0.39	-0.02	00:21:34:41.000
-0.03	8.05	0.05	0.38	-0.01	00:21:34:56.000
-0.02	8.05	0.05	0.38	-0.02	00:21:35:11.000
-0.03	8.04	0.05	0.39	-0.02	00:21:35:26.000
-0.03	8.05	0.05	0.39	-0.02	00:21:35:41.000
0.01	7.46	0.05	0.37	-0.03	00:21:35:56.000
0.09	1.07	0.07	0.39	-0.02	00:21:36:11.000
0	0.16	1.45	0.38	-0.03	00:21:36:26.000
-0.01	0.1	7.33	0.4	-0.02	00:21:36:41.000
-0.01	0.07	9.04	0.39	-0.03	00:21:36:56.000
-0.01	0.05	9.69	0.39	-0.02	00:21:37:11.000
-0.01	0.04	9.81	0.38	-0.04	00:21:37:26.000
-0.01	0.04	9.91	0.38	-0.03	00:21:37:41.000
-0.01	0.03	9.97	0.38	-0.04	00:21:37:56.000
0	0.02	10	0.37	-0.04	00:21:38:11.000
-0.01	0.02	10.01	0.38	-0.04	00:21:38:26.000
-0.01	0.02	10.02	0.37	-0.03	00:21:38:41.000
-0.02	0.01	10.02	0.37	-0.04	00:21:38:56.000
-0.02	0.01	10.02	0.37	-0.04	00:21:39:11.000
-0.01	0.01	10.03	0.37	-0.04	00:21:39:26.000
-0.01	0.01	10.01	0.37	-0.04	NOx
-0.01	0	10.01	0.38	-0.04	00:21:39:56.000
-0.01	0	10.02	0.38	-0.04	00:21:40:11.000
-0.01	0	10.01	0.37	-0.04	00:21:40:26.000
-0.01	0	10.01	0.37	-0.05	00:21:40:41.000
-0.01	0	10.01	0.37	-0.05	00:21:40:56.000
-0.02	0	10.01	0.37	-0.05	00:21:41:11.000
-0.02	0	10.01	0.38	-0.04	00:21:41:26.000
-0.02	0	10.01	0.38	-0.04	00:21:41:41.000
-0.01	0	10.01	0.37	-0.05	00:21:41:56.000
0.03	0.02	10.01	0.38	-0.07	00:21:42:11.000
-0.01	0	10.01	0.39	-0.05	00:21:42:26.000
-0.01	0	10.01	0.38	-0.05	00:21:42:41.000
-0.01	0	10.01	0.37	-0.05	00:21:42:56.000
0.89	0.31	10.01	0.37	-0.07	00:21:43:11.000
12.41	3.95	9.94	0.37	-0.11	00:21:43:26.000
13.62	4.19	9.79	0.36	-0.81	00:21:43:41.000
13.65	4.21	9.79	0.37	-0.97	00:21:43:56.000
13.65	4.22	9.72	0.41	-1.07	00:21:44:11.000
13.65	4.22	9.73	0.34	-1.11	00:21:44:26.000

GE-Energy & Environmental Research
 Post 8B-100-3 Pre M5 O2-CO2-1
 15 sec Averaged data
 For 5-23-2001 @ 21:23:41.41

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.65	4.22	9.8	0.24	-1.13	00:21:44:41.000
13.66	4.23	9.8	0.16	-1.14	00:21:44:56.000
13.67	4.23	9.77	0.09	-1.14	00:21:45:11.000
13.66	4.23	9.79	0.05	-1.15	00:21:45:26.000
13.66	4.23	9.84	0.04	-1.16	00:21:45:41.000
13.67	4.23	9.85	0.04	-0.47	00:21:45:56.000
13.67	4.23	9.85	0.05	0.08	00:21:46:11.000
13.67	4.23	9.85	0.04	0.08	00:21:46:26.000
13.67	4.23	9.81	0.04	0.08	00:21:46:41.000
13.67	4.23	9.79	0.04	0.08	00:21:46:56.000
13.66	4.24	9.78	0.04	0.08	Zero
13.67	4.23	9.79	0.04	0.08	00:21:47:26.000
13.67	4.24	9.82	0.04	0.09	00:21:47:41.000
13.68	4.24	9.85	0.04	0.08	00:21:47:56.000
13.67	4.24	9.84	0.04	0.09	00:21:48:11.000
13.68	4.24	9.79	0.04	0.08	00:21:48:26.000
13.68	4.24	9.8	0.12	0.11	00:21:48:41.000
13.68	4.24	9.83	0.87	0.12	00:21:48:56.000
13.67	4.24	9.84	2.15	0.09	00:21:49:11.000
13.67	4.24	9.81	3.23	0.09	00:21:49:26.000
13.68	4.24	9.78	5.05	0.08	00:21:49:41.000
13.68	4.24	9.74	6.59	0.08	00:21:49:56.000
13.67	4.24	9.78	7.96	0.09	00:21:50:11.000
13.67	4.24	9.85	8.93	0.08	00:21:50:26.000
13.68	4.24	9.83	9.62	0.09	00:21:50:41.000
13.68	4.23	9.83	9.89	0.09	00:21:50:56.000
13.68	4.24	9.83	10.01	0.08	00:21:51:11.000
13.67	4.23	9.78	10.06	0.08	00:21:51:26.000
13.69	4.24	9.74	10.09	0.09	00:21:51:41.000
13.68	4.24	9.75	10.09	0.09	00:21:51:56.000
13.68	4.24	9.8	10.12	0.08	00:21:52:11.000
13.68	4.23	9.81	10.15	0.09	CO
13.68	4.23	9.81	10.15	0.09	00:21:52:41.000
13.68	4.23	9.81	10.16	0.1	00:21:52:56.000
13.68	4.23	9.86	10.17	0.09	00:21:53:11.000
13.68	4.24	9.9	10.15	0.1	00:21:53:26.000
13.68	4.24	9.89	10.18	1.43	00:21:53:41.000
13.7	4.24	9.86	10.38	9.92	00:21:53:56.000
13.7	4.24	9.85	9.36	10.02	00:21:54:11.000
13.7	4.24	9.86	7.25	10.02	00:21:54:26.000
13.7	4.24	9.88	4.77	10.05	00:21:54:41.000
13.7	4.24	9.91	2.79	10.03	00:21:54:56.000

GE-Energy & Environmental Research
 Post 8B-100-3 Pre M5 O2-CO2-1
 15 sec Averaged data
 For 5-23-2001 @ 21:23:41.41

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.71	4.24	9.94	1.07	10.03	THC
13.72	4.24	9.94	0.43	10.02	00:21:55:26.000
13.7	4.24	9.91	0.16	10.03	00:21:55:41.000
13.7	4.24	9.88	0.12	10.03	00:21:55:56.000
13.7	4.24	9.87	0.1	10.03	00:21:56:11.000
13.72	4.25	9.89	0.08	10	00:21:56:26.000
13.7	4.24	9.86	0.1	10.02	00:21:56:41.000

85% Load

J-45

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8B Gas Turbine START DATE: 5/24/01 END DATE: 5/24/01		RUN NUMBER 8B-85-1 RUN START TIME: 22:20 RUN END TIME: 22:46	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:		
MAXIMUM RESPONSE TIME SEC. 65					
SPECIES		O2	CO2	NOx	
LOCATION		Stack	Stack	Stack	
CONCENTRATION UNIT		% dry	% dry	ppmvd	
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	
SPAN		25	10	20	
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	
	MID	12.00	5.00	10.00	
	LO			6.00	
	ZERO	0.0	0.0	0.00	
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02	
	MID	11.92	4.96	10.09	
	LO			6.07	
	ZERO	0.00	-0.02	0.03	
RESPONSE TIME (SECONDS)		43	44	59	
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.1%	0.2%	0.1%	
Ei = ((Cma - Cai)/Span)x100%	MID	-0.3%	-0.4%	0.4%	
	LO	N/A	N/A	0.4%	
	ZERO	N/A	-0.2%	0.2%	
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.09	8.06	10.03	
	ZERO	0.02	0.00	0.20	
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	0.4%	0.6%	0.1%	
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.1%	0.2%	0.9%	
FINAL BIAS CHECK, Cbf	UPSCALE	12.11	8.80	10.07	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.00	0.20	
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.4%	8.0%	0.4%	
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.2%	0.9%	
DRIFT CHECK, D	UPSCALE	0.1%	7.4%	0.2%	
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.0%	0.0%	
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.02	0.00	0.20	
Co = (Cbi,zero + Cbf,zero)/2					
AVERAGE % BIAS	UPSCALE	0.4%	4.3%	0.2%	
	ZERO	0.1%	0.2%	0.9%	
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		12.10	8.43	10.05	
Cm = (Cbi,upscale + Cbf,upscale)/2					
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.84	4.19	7.52	

RESULTS

DRIFT CORRECTED CONCENTRATION,	13.73	3.98	7.43		
Cgas = (Cavg - Co) x Cma / (Cm - Co)					
15% O2 CORRECTION,		3.27	6.11		
C15% = Cgas * 5.9 / (20.9 - % O2)					

J-46

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8B Gas Turbine START DATE: 5/24/01 END DATE: 5/24/01		RUN NUMBER: 8B-85-2 RUN START TIME: 23:29 RUN END TIME: 23:54	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:			
		MAXIMUM RESPONSE TIME SEC. 65				
SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.1%	0.2%	0.1%		
	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	12.11	8.80	10.07		
	ZERO	0.02	0.00	0.20		
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi-Cai)/Span)x100%	UPSCALE	0.4%	8.0%	0.4%		
	ZERO	0.1%	0.2%	0.9%		
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.09	8.09	10.09		
	ZERO	0.02	0.00	0.00		
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/(Span))x100%	UPSCALE	0.4%	0.9%	0.4%		
	ZERO	0.1%	0.2%	-0.2%		
DRIFT CHECK, D D = ((Cbf - Cbi)/(Span))x100%	UPSCALE	-0.1%	-7.1%	0.1%		
	ZERO	0.0%	0.0%	-1.0%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co=(Cbi,zero+Cbf,zero)/2		0.02	0.00	0.10		
AVERAGE % BIAS	UPSCALE	0.4%	4.5%	0.4%		
	ZERO	0.1%	0.2%	0.4%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm=(Cbi,upscale+Cbf,upscale)/2		12.10	8.45	10.08		
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.84	4.21	7.33		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.73	3.99	7.24		
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9 - % O2)		3.28	5.96		

J47

PLANT: Florida Power and Light RUN NUMBER 8B-85-3 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 0:25 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 0:50 CHECKED BY:
 START DATE: 5/25/01
 END DATE: 5/25/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, Ei Ei = ((Cma - Cai)/Span)x100%	HIGH	0.1%	0.2%	0.1%		
	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, Cbi (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	12.09	8.09	10.09		
	ZERO	0.02	0.00	0.00		
INITIAL SYSTEM CALIBRATION BIAS, Bi Bi = ((Cbi-Cai)/Span)x100%	UPSCALE	0.4%	0.9%	0.4%		
	ZERO	0.1%	0.2%	-0.2%		
FINAL BIAS CHECK, Cbf (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.09	8.07	10.11		
	ZERO	-0.03	0.00	0.00		
FINAL SYSTEM CALIBRATION BIAS, Bf Bf = ((Cbf - Cai)/(Span))x100%	UPSCALE	0.4%	0.7%	0.5%		
	ZERO	0.1%	0.2%	-0.2%		
DRIFT CHECK, D D = ((Cbf - Cbi)/(Span))x100%	UPSCALE	0.0%	-0.2%	0.1%		
	ZERO	0.0%	0.0%	0.0%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co Co=(Cbi,zero+Cbf,zero)/2		0.03	0.00	0.00		
AVERAGE % BIAS	UPSCALE	0.4%	0.8%	0.5%		
	ZERO	0.1%	0.2%	-0.2%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm Cm=(Cbi,upscale+Cbf,upscale)/2		12.09	8.08	10.10		
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.83	4.23	7.38		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.73	4.18	7.30		
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9- % O2)		3.44	6.01		

548

GE-Energy & Environmental Research
 Post 8B-65-3 Pre 8B-85-1
 15 sec Averaged data
 For 5-24-2001 @ 21:39:45.35

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.03	0	0.25	00:21:39:45.000
0.01	0	0.25	00:21:40:00.000
0.02	0	0.24	00:21:40:15.000
0.02	0	0.24	00:21:40:30.000
0.02	0	0.22	00:21:40:45.000
0.01	0	0.22	00:21:41:00.000
0.02	0	0.2	Zero
0.01	0	0.2	00:21:41:30.000
0.01	0	0.2	00:21:41:45.000
0.01	0	0.19	00:21:42:00.000
0.01	0	0.18	00:21:42:15.000
0.02	0	0.18	00:21:42:30.000
0.01	0	0.17	00:21:42:45.000
0.01	0	0.16	00:21:43:00.000
0.01	0	0.16	00:21:43:15.000
0.01	0.01	0.16	00:21:43:30.000
3.5	0.07	0.15	00:21:43:45.000
11.52	0.02	0.16	00:21:44:00.000
12.02	0	0.35	00:21:44:15.000
12.05	0	0.33	00:21:44:30.000
12.07	0	0.14	00:21:44:45.000
12.07	0	0.11	00:21:45:00.000
12.09	0	0.09	00:21:45:15.000
12.08	0	0.1	00:21:45:30.000
12.09	0	0.09	O2
12.09	0	0.08	00:21:46:00.000
12.08	0	0.08	00:21:46:15.000
12.08	0	0.08	00:21:46:30.000
10.86	0.98	0.08	00:21:46:45.000
1.41	7.42	0.1	00:21:47:00.000
0.08	7.99	0.11	00:21:47:15.000
0.03	8.03	0.11	00:21:47:30.000
0.02	8.04	0.08	00:21:47:45.000
0.01	8.05	0.08	00:21:48:00.000
0.01	8.06	0.08	CO2
0	8.07	0.07	00:21:48:30.000
0	8.07	0.07	00:21:48:45.000
-0.01	8.06	0.08	00:21:49:00.000
-0.01	8.07	0.06	00:21:49:15.000
0.02	7.55	0.08	00:21:49:30.000
0.13	1.43	0.21	00:21:49:45.000
0.03	0.16	1.36	00:21:50:00.000

J49

GE-Energy & Environmental Research
 Post 8B-65-3 Pre 8B-85-1
 15 sec Averaged data
 For 5-24-2001 @ 21:39:45.35

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.02	0.08	6.44	00:21:50:15.000
0.01	0.06	9.42	00:21:50:30.000
0.02	0.05	9.99	00:21:50:45.000
0.01	0.03	10.09	00:21:51:00.000
0.01	0.03	10.15	00:21:51:15.000
0.02	0.03	10.03	00:21:51:30.000
0.01	0.02	10.01	00:21:51:45.000
0.01	0.02	10.01	00:21:52:00.000
0.02	0.02	10.03	NOx
0.01	0.02	10.03	00:21:52:30.000
0.01	0.01	10.03	00:21:52:45.000
0.01	0.01	10.04	00:21:53:00.000
0	0.01	10.04	00:21:53:15.000
-0.01	0.02	10.04	00:21:53:30.000
-0.03	0.03	7.47	00:21:53:45.000
-0.02	0.04	2.34	00:21:54:00.000
0.01	0.22	0.73	00:21:54:15.000
1.26	0.18	0.02	00:21:54:30.000
0.64	0.05	0.02	00:21:54:45.000
0.14	0.04	0.02	00:21:55:00.000
0.02	0.03	0.01	00:21:55:15.000
-0.01	0.02	0.01	00:21:55:30.000
-0.02	0.02	0.02	00:21:55:45.000
-0.03	0.02	0	00:21:56:00.000
-0.03	0.02	0	00:21:56:15.000
-0.03	0.02	0	00:21:56:30.000
-0.03	0.01	-0.01	00:21:56:45.000
-0.03	0.01	-0.01	00:21:57:00.000
-0.03	0.01	-0.01	00:21:57:15.000
-0.02	0.01	0	00:21:57:30.000
-0.03	0.01	-0.01	00:21:57:45.000
-0.03	0.01	0	00:21:58:00.000
-0.02	0.01	0	CO
0.03	0.03	0	00:21:58:30.000
-0.01	0.01	0	00:21:58:45.000
-0.03	0.01	-0.01	00:21:59:00.000
0.01	0.02	0	00:21:59:15.000
1.58	0.62	0	00:21:59:30.000
12.31	3.85	0	00:21:59:45.000
13.77	4.16	0	00:22:00:00.000
13.82	4.18	0	00:22:00:15.000
13.89	4.18	0	00:22:00:30.000

J50

GE-Energy & Environmental Research
Post 8B-65-3 Pre 8B-85-1
15 sec Averaged data
For 5-24-2001 @ 21:39:45.35

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.91	4.18	-0.01	00:22:00:45.000
13.91	4.19	0	00:22:01:00.000
13.87	4.19	0	00:22:01:15.000
13.85	4.2	0	00:22:01:30.000
13.86	4.19	0	00:22:01:45.000
13.88	4.19	0	THC
13.88	4.19	0	00:22:02:15.000
13.88	4.19	0	00:22:02:30.000

J 51

Energy & Environmental Research
 Run 8B-85-1
 1 minute averaged data
 For 5-24-2001 @ 22:20:28.93

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.84	4.21	7.54	00:22:20:28.000
13.85	4.21	7.54	00:22:21:28.000
13.85	4.21	7.52	00:22:22:28.000
13.84	4.21	7.53	00:22:23:28.000
13.85	4.21	7.56	00:22:24:28.000
13.84	4.21	7.54	00:22:25:28.000
13.85	4.21	7.55	00:22:26:28.000
13.84	4.21	7.51	00:22:27:28.000
13.85	4.21	7.51	00:22:28:28.000
13.85	4.21	7.46	00:22:29:28.000
13.85	4.22	7.48	00:22:30:28.000
13.84	4.22	7.58	00:22:31:28.000
13.84	4.22	7.6	00:22:32:28.000
13.84	4.21	7.56	00:22:33:28.000
13.84	4.22	7.6	00:22:34:28.000
13.84	4.22	7.57	00:22:35:28.000
13.84	4.22	7.61	00:22:36:28.000
13.84	4.22	7.56	00:22:37:28.000
13.84	4.22	7.48	00:22:38:28.000
13.84	4.22	7.48	00:22:39:28.000
13.84	4.22	7.51	00:22:40:28.000
13.85	4.22	7.52	00:22:41:28.000
13.84	4.22	7.5	00:22:42:28.000
13.85	4.22	7.46	00:22:43:28.000
13.85	4.21	7.46	00:22:44:28.000
13.85	4.22	7.49	00:22:45:28.000
13.85	3.69	7.43	00:22:46:28.000
13.84444	4.195926	7.524074	Average

J52

GE-Energy & Environmental Research
 Post 8B-85-1 Pre 8B-85-2
 15 sec Averaged data
 For 5-24-2001 @ 22:47:25.61

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.05	0.02	0.4	00:22:47:25.000
0.05	0.02	0.39	00:22:47:40.000
0.04	0.01	0.38	00:22:47:55.000
0.04	0.01	0.38	00:22:48:10.000
0.03	0.01	0.38	00:22:48:25.000
0.04	0.01	0.37	00:22:48:40.000
0.03	0.01	0.36	00:22:48:55.000
0.03	0	0.36	00:22:49:10.000
0.03	0	0.34	00:22:49:25.000
0.02	0	0.34	Zero
0.02	0	0.32	00:22:49:55.000
0.02	0.01	0.32	00:22:50:10.000
0.02	0.01	0.3	00:22:50:25.000
5.18	0.07	0.3	00:22:50:40.000
11.77	0.01	0.27	00:22:50:55.008
12.05	0	0.3	00:22:51:10.008
12.08	0	0.33	00:22:51:25.008
12.1	0	0.24	00:22:51:40.008
12.11	0	0.21	00:22:51:55.008
12.11	0	0.2	00:22:52:10.008
12.11	0	0.19	O2
12.11	0	0.18	00:22:52:40.008
12.11	0	0.17	00:22:52:55.008
12.11	0	0.16	00:22:53:10.008
12.01	0.06	0.16	00:22:53:25.008
3.56	6.2	0.17	00:22:53:40.008
0.15	7.98	0.2	00:22:53:55.008
0.04	8.04	0.17	00:22:54:10.008
0.02	8.06	0.16	00:22:54:25.008
0.01	8.07	0.14	00:22:54:40.008
0.01	8.08	0.14	00:22:54:55.008
0.01	8.08	0.13	CO2
0	8.09	0.14	00:22:55:25.008
-0.01	8.09	0.13	00:22:55:40.008
0	8.09	0.13	00:22:55:55.008
-0.01	8.1	0.11	00:22:56:10.008
0	8.1	0.11	00:22:56:25.008
-0.01	8.09	0.11	00:22:56:40.008
-0.01	8.1	0.11	00:22:56:55.008
0.15	3.88	0.12	00:22:57:10.008
0.04	0.31	0.94	00:22:57:25.008
0.02	0.11	2.74	00:22:57:40.008

J53

GE-Energy & Environmental Research
 Post 8B-85-1 Pre 8B-85-2
 15 sec Averaged data
 For 5-24-2001 @ 22:47:25.61

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.02	0.07	8.3	00:22:57:55.008
0.01	0.06	9.83	00:22:58:10.008
0.02	0.05	9.98	00:22:58:25.008
0.01	0.04	10	00:22:58:40.008
0.01	0.03	10.03	00:22:58:55.008
0.01	0.03	10.05	00:22:59:10.008
0.01	0.02	10.07	00:22:59:25.008
0.01	0.02	10.05	00:22:59:40.008
0.01	0.02	10.07	NOx
0.01	0.02	10.07	00:23:00:10.008
0.02	0.02	10.07	00:23:00:25.008
0.01	0.03	10.07	00:23:00:40.008
-0.03	0.03	10.05	00:23:00:55.008
-0.02	0.04	10.38	00:23:01:10.008
-0.02	0.15	6.62	00:23:01:25.008
0.96	2.87	0.93	00:23:01:40.008
8.67	2.58	0.03	00:23:01:55.008
7.43	0.26	0.01	00:23:02:10.008
1.5	0.1	0.01	00:23:02:25.008
0.25	0.06	-0.01	00:23:02:40.008
0.04	0.05	0	00:23:02:55.008
-0.01	0.04	0	00:23:03:10.008
-0.01	0.04	0	00:23:03:25.008
-0.01	0.04	-0.01	00:23:03:40.008
-0.01	0.03	-0.01	00:23:03:55.008
-0.02	0.03	-0.01	00:23:04:10.008
-0.02	0.03	-0.01	00:23:04:25.008
-0.02	0.03	-0.01	00:23:04:40.008
-0.02	0.02	0	00:23:04:55.008
-0.02	0.02	-0.01	CO
-0.02	0.02	-0.01	00:23:05:25.008
-0.02	0.02	-0.01	00:23:05:40.008
-0.01	0.02	-0.01	00:23:05:55.008
-0.02	0.02	-0.01	00:23:06:10.008
-0.03	0.02	-0.01	00:23:06:25.008
-0.02	0.02	-0.01	00:23:06:40.008
-0.02	0.02	0	00:23:06:55.008
-0.02	0.03	0	00:23:07:10.008
-0.02	0.03	-0.01	00:23:07:25.008
-0.02	0.03	-0.01	00:23:07:40.008
-0.02	0.04	-0.01	00:23:07:55.008
-0.02	0.04	-0.01	00:23:08:10.008

J 54

GE-Energy & Environmental Research
 Post 8B-85-1 Pre 8B-85-2
 15 sec Averaged data
 For 5-24-2001 @ 22:47:25.61

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
-0.02	0.04	-0.01	00:23:08:25.008
-0.01	0.05	-0.01	00:23:08:40.008
-0.01	0.05	-0.01	THC Zero
-0.01	0.05	-0.01	00:23:09:10.008
-0.01	0.05	-0.01	00:23:09:25.008
-0.01	0.05	-0.01	00:23:09:40.008
-0.01	0.05	0	00:23:09:55.008
-0.02	0.05	-0.01	00:23:10:10.008
-0.01	0.05	0	00:23:10:25.008
0	0.05	-0.01	00:23:10:40.008
0	0.05	-0.01	00:23:10:55.008
0	0.05	-0.01	00:23:11:10.008
0	0.05	-0.01	00:23:11:25.008
0.01	0.05	-0.01	00:23:11:40.008
0.01	0.05	-0.01	00:23:11:55.008
0.04	0.07	0	00:23:12:10.008
0.01	0.06	-0.01	00:23:12:25.008
0.01	0.06	-0.01	00:23:12:40.008
0.01	0.09	0	00:23:12:55.008
0.05	0.16	-0.01	00:23:13:10.008
0.15	0.37	-0.01	00:23:13:25.008
3.08	2.85	-0.01	00:23:13:40.008
9.65	3.87	-0.01	00:23:13:55.008
12.62	4	-0.01	00:23:14:10.008
13.43	4.05	0	00:23:14:25.008
13.64	4.09	0	00:23:14:40.008
13.7	4.1	-0.01	00:23:14:55.008
13.72	4.11	0	00:23:15:10.008
13.73	4.13	-0.01	00:23:15:25.008
13.73	4.13	0	00:23:15:40.008
13.74	4.13	-0.01	00:23:15:55.008
13.74	4.13	-0.01	00:23:16:10.008
13.74	4.14	0	THC
13.75	4.14	0	00:23:16:40.008
13.74	4.14	-0.01	00:23:16:55.008

J55

Energy & Environmental Research
Run 8B-85-2

1 minute averaged data
For 5-24-2001 @ 23:29:41.19

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.84	4.21	7.15	00:23:29:41.008
13.84	4.21	7.16	00:23:30:41.008
13.84	4.21	7.2	00:23:31:41.008
13.83	4.22	7.22	00:23:32:41.008
13.84	4.21	7.21	00:23:33:41.008
13.83	4.22	7.3	00:23:34:41.008
13.83	4.22	7.36	00:23:35:41.008
13.83	4.22	7.38	00:23:36:41.008
13.83	4.22	7.44	00:23:37:41.008
13.83	4.22	7.46	00:23:38:41.008
13.84	4.22	7.37	00:23:39:41.008
13.83	4.22	7.37	00:23:40:41.008
13.84	4.21	7.37	00:23:41:41.008
13.83	4.22	7.38	00:23:42:41.008
13.83	4.22	7.35	00:23:43:41.008
13.83	4.22	7.4	00:23:44:41.008
13.83	4.22	7.46	00:23:45:41.008
13.83	4.22	7.38	00:23:46:41.008
13.84	4.22	7.4	00:23:47:41.008
13.83	4.22	7.37	00:23:48:41.008
13.84	4.22	7.31	00:23:49:41.008
13.84	4.22	7.31	00:23:50:41.008
13.84	4.21	7.38	00:23:51:41.008
13.84	4.22	7.31	00:23:52:41.008
13.84	4.22	7.33	00:23:53:41.008
13.84	4.22	7.27	00:23:54:41.008
13.835	4.217692	7.332308	Average

J56

GE-Energy & Environmental Research
 Post 8B-85-2 Pre 8B-85-3
 15 sec Averaged data
 For 5-24-2001 @ 23:56:18.53

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.08	0.01	0.38	00:23:56:18.008
0.04	0.01	0.38	00:23:56:33.008
0.03	0.01	0.38	00:23:56:48.008
0.03	0.01	0.37	00:23:57:03.008
0.03	0.01	0.36	00:23:57:18.008
0.03	0.01	0.34	00:23:57:33.008
0.03	0.01	0.34	00:23:57:48.008
0.02	0.01	0.33	00:23:58:03.008
0.03	0.01	0.32	00:23:58:18.008
0.02	0	0.32	Zero
0.03	0	0.31	00:23:58:48.008
0.03	0	0.3	00:23:59:03.008
0.02	0	0.28	00:23:59:18.008
0.02	0	0.28	00:23:59:33.008
0.03	0	0.28	00:23:59:48.008
0.02	0	0.26	01:00:00:03.008
0.02	0	0.26	01:00:00:18.008
0.02	0	0.25	01:00:00:33.008
3.63	0.06	0.26	01:00:00:48.008
11.56	0.01	0.43	01:00:01:03.008
12.05	0	0.5	01:00:01:18.008
12.08	0	0.27	01:00:01:33.008
12.09	0	0.21	O2
12.1	0	0.17	01:00:02:03.008
12.09	0	0.16	01:00:02:18.008
12.1	0	0.16	01:00:02:33.008
5.38	4.96	0.17	01:00:02:48.008
0.21	7.95	0.21	01:00:03:03.008
0.05	8.03	0.21	01:00:03:18.008
0.03	8.05	0.15	01:00:03:33.008
0.01	8.07	0.14	01:00:03:48.008
0.01	8.07	0.14	01:00:04:03.008
0.01	8.08	0.14	01:00:04:18.008
0	8.09	0.14	CO2
0	8.09	0.14	01:00:04:48.008
0	8.08	0.12	01:00:05:03.008
0	8.09	0.12	01:00:05:18.008
0.08	6.56	0.12	01:00:05:33.008
0.11	0.87	0.17	01:00:05:48.008
0.03	0.13	2.98	01:00:06:03.008
0.02	0.07	6.5	01:00:06:18.008
0.03	0.05	9.27	01:00:06:33.008

GE-Energy & Environmental Research
 Post 8B-85-2 Pre 8B-85-3
 15 sec Averaged data
 For 5-24-2001 @ 23:56:18.53

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.02	0.04	9.98	01:00:06:48.008
0.02	0.03	10.02	01:00:07:03.008
0.01	0.03	10.05	01:00:07:18.008
0.02	0.02	10.08	01:00:07:33.008
0.02	0.02	10.09	NOx
0.02	0.02	10.09	01:00:08:03.008
0.02	0.02	10.09	01:00:08:18.008
0.02	0.02	10.11	01:00:08:33.008
0	0.01	10.1	01:00:08:48.008
0	0.02	10.1	01:00:09:03.008
0.02	0.02	10.11	01:00:09:18.008
0.03	0.04	10.09	01:00:09:33.008
-0.01	0.03	10.24	01:00:09:48.008
-0.01	0.04	6.06	01:00:10:03.008
0	0.16	0.81	01:00:10:18.008
2.41	0.33	0.09	01:00:10:33.008
6.88	0.12	0.01	01:00:10:48.008
8.06	0.05	0.02	01:00:11:03.008
5.28	0.03	0.02	01:00:11:18.008
0.89	0.02	0.01	01:00:11:33.008
0.11	0.02	0.02	01:00:11:48.008
0.02	0.01	0.01	01:00:12:03.008
0.01	0.01	0	01:00:12:18.008
0	0.01	0	01:00:12:33.008
0	0.01	0	01:00:12:48.008
0	0.01	0	01:00:13:03.008
-0.01	0.01	0	01:00:13:18.008
-0.01	0.01	0	01:00:13:33.008
-0.01	0.01	0.01	01:00:13:48.008
-0.01	0.01	0.02	01:00:14:03.008
-0.01	0.01	0.02	01:00:14:18.008
-0.01	0.01	0.01	CO
0.27	0.06	0.02	01:00:14:48.008
0.35	0.1	0.02	01:00:15:03.008
0.15	0.03	0.01	01:00:15:18.008
0.03	0	0.02	01:00:15:33.008
7.02	2.37	0.02	01:00:15:48.008
13.52	4.12	0.02	01:00:16:03.008
13.79	4.18	0.01	01:00:16:18.008
13.82	4.2	0.01	01:00:16:33.008
13.87	4.2	0.01	01:00:16:48.008
13.89	4.2	0.02	01:00:17:03.008

V 58

GE-Energy & Environmental Research
Post 8B-85-2 Pre 8B-85-3
15 sec Averaged data
For 5-24-2001 @ 23:56:18.53

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.88	4.21	0.02	01:00:17:18.008
13.86	4.22	0.01	01:00:17:33.008
13.86	4.22	0.01	01:00:17:48.008
13.86	4.22	0	01:00:18:03.008
13.86	4.22	-0.01	01:00:18:18.008
13.85	4.22	0	01:00:18:33.008
13.85	4.22	-0.01	01:00:18:48.008
13.85	4.22	-0.01	01:00:19:03.008
13.86	4.22	0	THC
13.86	4.22	0	01:00:19:33.008
13.85	4.22	0	01:00:19:48.008
13.9	4.23	0	01:00:20:03.008

J59

Energy & Environmental Research
 Run 8B-85-3
 1 minute averaged data
 For 5-25-2001 @ 00:25:39.89

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
13.81	4.22	7.33	0.23	0	00:00:25:39.000
13.83	4.22	7.32	0.23	0.08	00:00:26:39.000
13.83	4.22	7.3	0.23	0.07	00:00:27:39.000
13.83	4.22	7.33	0.23	0.09	00:00:28:39.000
13.83	4.22	7.32	0.23	0.07	00:00:29:39.000
13.83	4.23	7.36	0.23	0.09	00:00:30:39.000
13.83	4.23	7.36	0.23	0.09	00:00:31:39.000
13.83	4.23	7.36	0.23	0.08	00:00:32:39.000
13.83	4.22	7.35	0.23	0.07	00:00:33:39.000
13.83	4.22	7.37	0.23	0.07	00:00:34:39.000
13.83	4.22	7.39	0.23	0.09	00:00:35:39.000
13.83	4.23	7.38	0.23	0.06	00:00:36:39.000
13.83	4.23	7.38	0.23	0.07	00:00:37:39.000
13.83	4.22	7.38	0.23	0.03	00:00:38:39.000
13.83	4.23	7.44	0.23	0.01	00:00:39:39.000
13.83	4.23	7.44	0.23	-0.01	00:00:40:39.000
13.83	4.23	7.43	0.24	-0.03	00:00:41:39.000
13.83	4.23	7.42	0.23	-0.04	00:00:42:39.000
13.83	4.23	7.43	0.23	-0.05	00:00:43:39.000
13.83	4.23	7.41	0.23	-0.06	00:00:44:39.000
13.83	4.23	7.37	0.23	-0.07	00:00:45:39.000
13.83	4.23	7.43	0.23	-0.08	00:00:46:39.000
13.83	4.23	7.39	0.23	-0.09	00:00:47:39.000
13.83	4.22	7.37	0.23	-0.08	00:00:48:39.000
13.83	4.22	7.39	0.23	-0.01	00:00:49:39.000
13.84	4.22	7.36	0.23	-0.04	00:00:50:39.000
13.82962	4.225385	7.377308	0.230385	0.015769	Average

✓ 60

GE-Energy & Environmental Research
 Post 8B-85-3

15 sec Averaged data
 For 5-25-2001 @ 00:54:04.50

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.03	0.01	0.36	00:00:54:04.000
0.03	0.01	0.36	00:00:54:19.000
0.03	0.01	0.34	00:00:54:34.000
0.03	0	0.34	00:00:54:49.000
0.03	0	0.34	00:00:55:04.000
0.03	0	0.32	Zero
0.02	0	0.32	00:00:55:34.000
0.02	0	0.32	00:00:55:49.000
0.02	0	0.31	00:00:56:04.000
0.01	0	0.3	00:00:56:19.000
0.02	0	0.3	00:00:56:34.000
4.77	0.07	0.32	00:00:56:49.000
11.72	0.01	0.45	00:00:57:04.000
12.04	0.01	0.43	00:00:57:19.000
12.07	0	0.3	00:00:57:34.000
12.07	0	0.24	00:00:57:49.000
12.09	0	0.2	00:00:58:04.000
12.08	0	0.2	00:00:58:19.000
12.09	0	0.19	O2
12.09	0	0.18	00:00:58:49.000
12.08	0	0.18	00:00:59:04.000
12.08	0.01	0.17	00:00:59:19.000
12.08	0.01	0.15	00:00:59:34.000
4.62	5.5	0.18	00:00:59:49.000
0.19	7.94	0.21	00:01:00:04.000
0.05	8.02	0.21	00:01:00:19.000
0.03	8.04	0.16	00:01:00:34.000
0.01	8.06	0.16	00:01:00:49.000
0.01	8.06	0.16	00:01:01:04.000
0.01	8.07	0.14	CO2
0	8.07	0.14	00:01:01:34.000
0	8.06	0.14	00:01:01:49.000
-0.01	8.07	0.14	00:01:02:04.000
0.1	6.27	0.14	00:01:02:19.000
0.11	0.77	0.52	00:01:02:34.000
0.02	0.13	2.18	00:01:02:49.000
0.02	0.08	6.31	00:01:03:04.000
0.02	0.06	9.85	00:01:03:19.000
0.01	0.05	9.97	00:01:03:34.000
0.02	0.04	10.06	00:01:03:49.000
0.02	0.03	10.07	00:01:04:04.000
0.02	0.03	10.1	00:01:04:19.000

J61

GE-Energy & Environmental Research

Post 8B-85-3

15 sec Averaged data

For 5-25-2001 @ 00:54:04.50

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS

0.02	0.02	10.12	00:01:04:34.000
0.01	0.02	10.11	00:01:04:49.000
0.02	0.02	10.11	Nox
0	0.02	10.11	00:01:05:19.000
0.01	0.02	10.11	00:01:05:34.000
0	0.03	10.09	00:01:05:49.000
-0.01	0.04	10.13	00:01:06:04.000
-0.02	0.04	9.23	00:01:06:19.000
-0.02	0.04	7.3	00:01:06:34.000
-0.02	0.04	3.65	00:01:06:49.000
-0.01	0.05	1.54	00:01:07:04.000
-0.01	0.07	0.32	00:01:07:19.000
0	0.09	0.6	00:01:07:34.000
0	0.16	0.31	00:01:07:49.000
0.02	0.18	0.14	00:01:08:04.000
0.05	0.1	0.06	00:01:08:19.000
0.03	0.07	0.05	00:01:08:34.000
0.01	0.06	0.03	00:01:08:49.000
-0.01	0.05	0.03	00:01:09:04.000
-0.02	0.04	0.03	00:01:09:19.000
-0.02	0.04	0.04	00:01:09:34.000
-0.02	0.04	0.03	00:01:09:49.000
-0.02	0.04	0.02	CO
-0.01	0.03	0.01	00:01:10:19.000
-0.01	0.03	0.01	00:01:10:34.000
-0.02	0.01	0.01	00:01:10:49.000
0.03	0.03	0.03	00:01:11:04.000
-0.03	0.01	0.01	00:01:11:19.000
-0.03	0.02	-0.01	00:01:11:34.000
-0.02	0.02	0	00:01:11:49.000
-0.02	0.03	-0.01	00:01:12:04.000
-0.02	0.03	-0.01	00:01:12:19.000
0.02	0.04	-0.01	00:01:12:34.000
0.05	0.04	0	00:01:12:49.000
0.05	0.04	0	Nox Zero
0.04	0.04	0	00:01:13:19.000
0.03	0.05	0	00:01:13:34.000
0.03	0.05	0	00:01:13:49.000
0.03	0.05	0	00:01:14:04.000
0.03	0.06	0	00:01:14:19.000
0.03	0.06	0.01	THC
0.04	0.06	0.01	00:01:14:49.000

J62

65% Load

J63

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8B Gas Turbine START DATE: 5/24/01 END DATE: 5/24/01		RUN NUMBER 8B-65-1 RUN START TIME: 18:45 RUN END TIME: 19:12	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:		
MAXIMUM RESPONSE TIME SEC. 65					
SPECIES		O2	CO2	NOx	
LOCATION		Stack	Stack	Stack	
CONCENTRATION UNIT		% dry	% dry	ppmvd	
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	
SPAN		25	10	20	
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	
	MID	12.00	5.00	10.00	
	LO			6.00	
	ZERO	0.0	0.0	0.00	
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02	
	MID	11.92	4.96	10.09	
	LO			6.07	
	ZERO	0.00	-0.02	0.03	
RESPONSE TIME (SECONDS)		43	44	59	
INITIAL ANALYZER CALIBRATION ERROR, Ei $Ei = ((Cma - Cai)/Span) \times 100\%$	HIGH	0.1%	0.2%	0.1%	
	MID	-0.3%	-0.4%	0.4%	
	LO	N/A	N/A	0.4%	
	ZERO	N/A	-0.2%	0.2%	
INITIAL BIAS CHECK, Cbi <i>(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)</i>	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	
	UPSCALE	12.03	8.02	10.18	
	ZERO	0.02	0.01	0.06	
INITIAL SYSTEM CALIBRATION BIAS, Bi $Bi = ((Cbi - Cai)/Span) \times 100\%$	UPSCALE	0.1%	0.2%	0.9%	
	ZERO	0.1%	0.3%	0.2%	
FINAL BIAS CHECK, Cbf <i>(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)</i>	UPSCALE	12.03	8.04	10.05	
	ZERO	0.01	0.00	0.06	
FINAL SYSTEM CALIBRATION BIAS, Bf $Bf = ((Cbf - Cai)/(Span)) \times 100\%$	UPSCALE	0.1%	0.4%	0.3%	
	ZERO	0.0%	0.2%	0.2%	
DRIFT CHECK, D $D = ((Cbf - Cbi)/(Span)) \times 100\%$	UPSCALE	0.0%	0.2%	-0.6%	
	ZERO	0.0%	-0.1%	0.0%	
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co $Co = (Cbi.zero + Cbf.zero) / 2$		0.02	0.01	0.06	
AVERAGE % BIAS	UPSCALE	0.1%	0.3%	0.6%	
	ZERO	0.1%	0.3%	0.2%	
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm $Cm = (Cbi.upscale + Cbf.upscale) / 2$		12.03	8.03	10.12	
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.90	4.14	7.01	

RESULTS

DRIFT CORRECTED CONCENTRATION, $C_{gas} = (C_{avg} - Co) \times C_{ma} / (C_m - Co)$	13.87	4.12	6.91		
15% O2 CORRECTION, $C_{15\%} = C_{gas} \times 5.9 / (20.9 - \% O_2)$		3.46	5.80		

J64

PLANT: Florida Power and Light RUN NUMBER 8B-65-2 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 19:55 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 20:23 CHECKED BY:
 START DATE: 5/24/01
 END DATE: 5/24/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	-0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.1%	0.2%	0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.03	8.04	10.05		
	ZERO	0.01	0.00	0.06		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	0.1%	0.4%	0.3%		
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.0%	0.2%	0.2%		
FINAL BIAS CHECK, Cbf	UPSCALE	12.04	8.03	10.07		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.00	0.06		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.2%	0.3%	0.4%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.2%	0.2%		
DRIFT CHECK, D	UPSCALE	0.0%	-0.1%	0.1%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.0%	0.0%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.02	0.00	0.06		
Co = (Cbi_zero + Cbf_zero)/2						
AVERAGE % BIAS	UPSCALE	0.1%	0.3%	0.3%		
	ZERO	0.1%	0.2%	0.2%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		12.04	8.04	10.06		
Cm = (Cbi_upscale + Cbf_upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.90	4.14	7.01		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.86	4.12	6.95		
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.46	5.83		

J65

PLANT: Florida Power and Light CITY, STATE: Martin Station LOCATION: 8B Gas Turbine START DATE: 5/24/01 END DATE: 5/24/01		RUN NUMBER: 8B-65-3 RUN START TIME: 21:10 RUN END TIME: 21:34	CEM OPERATOR: John Maxwell ENTERED BY: John Maxwell CHECKED BY:		
MAXIMUM RESPONSE TIME SEC. 65					
SPECIES		O2	CO2	NOx	
LOCATION		Stack	Stack	Stack	
CONCENTRATION UNIT		% dry	% dry	ppmvd	
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90	
SPAN		25	10	20	
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00	
	MID	12.00	5.00	10.00	
	LO			6.00	
	ZERO	0.0	0.0	0.00	
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02	
	MID	11.92	4.96	10.09	
	LO			6.07	
	ZERO	0.00	-0.02	0.03	
RESPONSE TIME (SECONDS)		43	44	59	
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.1%	0.2%	0.1%	
Ei = ((Cma - Cai)/Span)x100%	MID	-0.3%	-0.4%	0.4%	
	LO	N/A	N/A	0.4%	
	ZERO	N/A	-0.2%	0.2%	
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.04	8.03	10.07	
	ZERO	0.02	0.00	0.06	
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	0.2%	0.3%	0.4%	
Bi = ((Cbi - Cai)/Span)x100%	ZERO	0.1%	0.2%	0.2%	
FINAL BIAS CHECK, Cbf	UPSCALE	12.09	8.06	10.03	
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.02	0.00	0.20	
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	0.4%	0.6%	0.1%	
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.1%	0.2%	0.9%	
DRIFT CHECK, D	UPSCALE	0.2%	0.3%	-0.2%	
D = ((Cbf - Cbi)/(Span))x100%	ZERO	0.0%	0.0%	0.7%	
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.02	0.00	0.13	
Co = (Cbi.zero + Cbf.zero)/2					
AVERAGE % BIAS	UPSCALE	0.3%	0.4%	0.2%	
	ZERO	0.1%	0.2%	0.5%	
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		12.07	8.05	10.05	
Cm = (Cbi,upscale + Cbf,upscale)/2					
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.91	4.15	6.88	

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas = (Cavg - Co) x Cma / (Cm - Co)	13.84	4.13	6.80	
15% O2 CORRECTION, C15% = Cgas * 5.9 / (20.9 - % O2)		3.45	5.68	

J 66

Energy & Environmental Research
 Post 8B-50-3 Pre 8B-65-1
 1 minute averaged data
 For 5-24-2001 @ 18:13:40.03

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.03	0.01	0.09	00:18:13:40.000
0.02	0.01	0.06	00:18:14:40.000
0.02	0.01	0.06	Zero
0.02	0.01	0.04	00:18:16:40.000
3.85	0.03	0.08	00:18:17:40.000
12.03	0.01	0.09	O2
12.06	0.01	0.02	00:18:19:40.000
9	2.19	0.02	00:18:20:40.000
0.05	8.02	0.02	CO2
0.04	7.49	0.03	00:18:22:40.000
0.05	0.22	4.88	00:18:23:40.000
0.02	0.03	10.19	00:18:24:40.000
0.01	0.02	10.18	NO
2.76	1.29	7.74	00:18:26:40.000
4.01	1.94	3.94	00:18:27:40.000
0.82	0.29	0.34	00:18:28:40.000
0.05	0.05	0.03	00:18:29:40.000
0	0.04	0.03	CO
0.75	0.61	0.02	00:18:31:40.000
3.52	0.98	4.77	00:18:32:40.000
5.52	1.21	5.1	THC
11.11	3.93	0.05	00:18:34:40.000
13.75	4.04	0.02	00:18:35:40.000

J 67

Energy & Environmental Research
 Run 8B-65-1
 1 minute averaged data
 For 5-24-2001 @ 18:45:35.39

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.9	4.14	6.93	00:18:45:35.000
13.91	4.13	6.96	00:18:46:35.000
13.9	4.13	6.95	00:18:47:35.000
13.91	4.14	7.01	00:18:48:35.000
13.91	4.13	7	00:18:49:35.000
13.91	4.14	7.01	00:18:50:35.000
13.91	4.14	6.99	00:18:51:35.000
13.9	4.14	7.01	00:18:52:35.000
13.9	4.15	6.99	00:18:53:35.000
13.9	4.15	7.1	00:18:54:35.000
13.9	4.14	7.07	00:18:55:35.000
13.9	4.15	7.05	00:18:56:35.000
13.9	4.14	7.08	00:18:57:35.000
13.9	4.15	7.05	00:18:58:35.000
13.9	4.15	7.01	00:18:59:35.000
13.9	4.15	7.03	00:19:00:35.000
13.9	4.14	7.05	00:19:01:35.000
13.89	4.15	7.02	00:19:02:35.000
13.9	4.14	7.02	00:19:03:35.000
13.9	4.14	7.05	00:19:04:35.000
13.91	4.14	7.03	00:19:05:35.000
13.9	4.15	7.02	00:19:06:35.000
13.9	4.14	6.98	00:19:07:35.000
13.9	4.14	7.01	00:19:08:35.000
13.9	4.14	7	00:19:09:35.000
13.9	4.14	6.99	00:19:10:35.000
13.89	4.14	6.99	00:19:11:35.000
13.9	4.14	6.99	00:19:12:35.000
13.90143	4.141786	7.013929	Average

JL8

GE-Energy & Environmental Research

Post 8B-65-1 Pre 8B-65-2

15 sec Averaged data

For 5-24-2001 @ 19:15:46.45

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.03	0.01	0.31	00:19:15:46.000
0.03	0.01	0.3	00:19:16:01.000
0.02	0	0.29	00:19:16:16.000
0.01	0	0.27	00:19:16:31.000
0.02	0	0.25	00:19:16:46.000
0.01	0	0.25	Zero
0.01	0	0.23	00:19:17:16.000
0.01	0	0.24	00:19:17:31.000
0.01	0	0.23	00:19:17:46.000
0.01	0	0.22	00:19:18:01.000
0.01	0	0.21	00:19:18:16.000
0.01	0	0.2	00:19:18:31.000
0.01	0	0.2	00:19:18:46.000
0	0	0.18	00:19:19:01.000
0.01	0	0.18	00:19:19:16.000
0.12	0.01	0.17	00:19:19:31.000
8.71	0.05	0.23	00:19:19:46.000
11.87	0	0.47	00:19:20:01.000
12	0	0.38	00:19:20:16.000
12.02	0	0.17	00:19:20:31.000
12.03	0	0.13	00:19:20:46.000
12.03	0	0.11	O2
12.04	0	0.11	00:19:21:16.000
12.04	0	0.09	00:19:21:31.000
12.04	0	0.09	00:19:21:46.000
12.03	0	0.09	00:19:22:01.000
12	0	0.09	00:19:22:16.000
11.96	0.01	0.09	00:19:22:31.000
11.99	0.01	0.09	00:19:22:46.000
12.04	0.01	0.11	00:19:23:01.000
6.33	4.2	0.12	00:19:23:16.000
0.3	7.88	0.14	00:19:23:31.000
0.04	8	0.15	00:19:23:46.000
0.02	8.02	0.1	00:19:24:01.000
0.01	8.03	0.07	00:19:24:16.000
0	8.04	0.07	CO2
0	8.04	0.08	00:19:24:46.000
-0.01	8.05	0.07	00:19:25:01.000
-0.01	8.05	0.07	00:19:25:16.000
-0.01	8.03	0.07	00:19:25:31.000
-0.02	8.06	0.07	00:19:25:46.000
0.11	5.17	0.1	00:19:26:01.000

519

GE-Energy & Environmental Research
 Post 8B-65-1 Pre 8B-65-2
 15 sec Averaged data
 For 5-24-2001 @ 19:15:46.45

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.06	0.5	0.33	00:19:26:16.000
0.02	0.11	2.79	00:19:26:31.000
0.02	0.06	8.14	00:19:26:46.000
0.01	0.05	9.65	00:19:27:01.000
0.01	0.04	10.06	00:19:27:16.000
0.01	0.03	10.1	00:19:27:31.000
0.01	0.02	10.11	00:19:27:46.000
0.01	0.02	10.03	00:19:28:01.000
0.02	0.02	10.03	00:19:28:16.000
0.01	0.01	10.03	00:19:28:31.000
0.01	0.01	10.05	00:19:28:46.000
0.01	0.01	10.05	NOx
0.01	0.01	10.05	00:19:29:16.000
0.01	0.01	10.06	00:19:29:31.000
0.01	0.01	10.07	00:19:29:46.000
-0.01	0.01	10.05	00:19:30:01.000
0	0.02	10.03	00:19:30:16.000
-0.02	0.03	8.12	00:19:30:31.000
-0.01	0.03	4.92	00:19:30:46.000
0	0.22	1.62	00:19:31:01.000
0.35	0.23	0.05	00:19:31:16.000
0.28	0.04	0.05	00:19:31:31.000
0.07	0.02	0.06	00:19:31:46.000
0	0.02	0.06	00:19:32:01.000
-0.03	0.01	0.05	00:19:32:16.000
-0.03	0.02	0.05	00:19:32:31.000
-0.04	0.01	0.05	00:19:32:46.000
-0.03	0.01	0.05	00:19:33:01.000
-0.03	0.01	0.05	00:19:33:16.000
-0.03	0.01	0.05	00:19:33:31.000
-0.03	0.01	0.05	00:19:33:46.000
-0.03	0.01	0.05	00:19:34:01.000
-0.02	0.01	0.04	00:19:34:16.000
-0.02	0.01	0.03	00:19:34:31.000
-0.03	0.01	0.03	00:19:34:46.000
-0.02	0.01	0.03	THC Zero
-0.02	0.01	0.03	00:19:35:16.000
-0.02	0.01	0.03	00:19:35:31.000
-0.03	0.01	0.03	00:19:35:46.000
-0.02	0.01	0.03	00:19:36:01.000
-0.02	0.01	0.04	00:19:36:16.000
-0.02	0.01	0.03	00:19:36:31.000

J70

Energy & Environmental Research
 Run 8B-65-2
 1 minute averaged data
 For 5-24-2001 @ 19:55:02.64

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.92	4.13	6.99	00:19:55:02.000
13.91	4.14	7.03	00:19:56:02.000
13.91	4.14	7.04	00:19:57:02.000
13.91	4.14	7.02	00:19:58:02.000
13.91	4.14	6.99	00:19:59:02.000
13.9	4.15	6.98	00:20:00:02.000
13.9	4.15	6.99	00:20:01:02.000
13.9	4.14	7.04	00:20:02:02.000
13.9	4.14	7.05	00:20:03:02.000
13.9	4.14	7.03	00:20:04:02.000
13.9	4.14	7.09	00:20:05:02.000
13.9	4.14	7.01	00:20:06:02.000
13.9	4.14	7.02	00:20:07:02.000
13.89	4.14	7.04	00:20:08:02.000
13.89	4.14	7.1	00:20:09:02.000
13.89	4.14	7.03	00:20:10:02.000
13.9	4.15	7.01	00:20:11:02.000
13.89	4.15	6.98	00:20:12:02.000
13.9	4.14	6.97	00:20:13:02.000
13.9	4.14	6.99	00:20:14:02.000
13.9	4.14	6.99	00:20:15:02.000
13.89	4.14	7.05	00:20:16:02.000
13.9	4.14	7.03	00:20:17:02.000
13.9	4.14	7.01	00:20:18:02.000
13.9	4.14	6.99	00:20:19:02.000
13.9	4.14	6.94	00:20:20:02.000
13.9	4.15	6.98	00:20:21:02.000
13.9	4.15	6.99	00:20:22:02.000
13.91	4.15	7.02	00:20:23:02.000
13.90069	4.142069	7.013793	Average

J71

GE-Energy & Environmental Research
 Post 8B-65-2 Pre 8B-65-3
 15 sec Averaged data
 For 5-24-2001 @ 20:26:12.97

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.06	0	0.5	00:20:26:12.000
0.04	0	0.49	00:20:26:27.000
0.04	0	0.36	00:20:26:42.000
0.03	0	0.3	00:20:26:57.000
0.03	0	0.3	00:20:27:12.000
0.02	0	0.28	00:20:27:27.000
0.02	0	0.28	00:20:27:42.000
0.02	0	0.27	00:20:27:57.000
0.01	0	0.26	00:20:28:12.000
0.01	0	0.26	00:20:28:27.000
0.01	0	0.25	00:20:28:42.000
0.01	0	0.23	00:20:28:57.000
0.01	0	0.23	00:20:29:12.000
0.01	0	0.22	00:20:29:27.000
0	0	0.22	00:20:29:42.000
0.01	0	0.21	00:20:29:57.000
0	0	0.2	00:20:30:12.000
0	0	0.2	00:20:30:27.000
0	0	0.19	00:20:30:42.000
0.01	0	0.18	00:20:30:57.000
0	0	0.18	00:20:31:12.000
0.01	0	0.16	00:20:31:27.000
0.01	-0.01	0.16	00:20:31:42.000
0.01	-0.01	0.16	00:20:31:57.000
-0.01	0	0.15	00:20:32:12.000
0	0	0.14	00:20:32:27.000
2.29	0.05	0.14	00:20:32:42.000
11.17	0.01	0.11	00:20:32:57.000
11.97	0	0.17	00:20:33:12.000
12.02	0	0.25	00:20:33:27.000
12.03	0	0.14	00:20:33:42.000
12.03	0	0.1	00:20:33:57.000
12.04	0	0.09	00:20:34:12.000
12.04	0	0.09	00:20:34:27.000
12.05	0	0.07	00:20:34:42.000
12.04	0	0.07	00:20:34:57.000
12.05	0	0.07	00:20:35:12.000
8.79	2.52	0.07	00:20:35:27.000
0.58	7.76	0.07	00:20:35:42.000
0.05	7.98	0.09	00:20:35:57.000
0.02	8.01	0.08	00:20:36:12.000
0.01	8.02	0.07	00:20:36:27.000

J72

GE-Energy & Environmental Research
 Post 8B-65-2 Pre 8B-65-3
 15 sec Averaged data
 For 5-24-2001 @ 20:26:12.97

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0	8.03	0.07	CO2
0	8.03	0.07	00:20:36:57.000
-0.01	8.04	0.07	00:20:37:12.000
-0.01	8.05	0.07	00:20:37:27.000
-0.01	8.05	0.06	00:20:37:42.000
-0.01	8.06	0.05	00:20:37:57.000
-0.02	8.06	0.05	00:20:38:12.000
-0.02	8.06	0.05	00:20:38:27.000
-0.02	8.05	0.05	00:20:38:42.000
-0.02	8.06	0.06	00:20:38:57.000
0.1	5.54	0.05	00:20:39:12.000
0.06	0.55	0.6	00:20:39:27.000
0.01	0.12	2.21	00:20:39:42.000
0.01	0.07	7.34	00:20:39:57.000
0.01	0.05	9.72	00:20:40:12.000
0	0.04	9.92	00:20:40:27.000
0.01	0.03	9.98	00:20:40:42.000
0.01	0.03	10.01	00:20:40:57.000
0.01	0.03	10.02	00:20:41:12.000
0	0.02	10.05	00:20:41:27.000
0	0.02	10.05	00:20:41:42.000
0	0.01	10.07	00:20:41:57.000
0	0.02	10.07	NOx
0.01	0.01	10.07	00:20:42:27.000
0.01	0.01	10.07	00:20:42:42.000
0.01	0.01	10.07	00:20:42:57.000
0.01	0.01	10.12	00:20:43:12.000
0	0.01	6.74	00:20:43:27.000
-0.01	0.01	1.06	00:20:43:42.000
0	0.01	0.19	00:20:43:57.000
0.02	0.03	0.03	00:20:44:12.000
0.03	0.01	0.03	00:20:44:27.000
0.04	0	0.03	00:20:44:42.000
0.01	0	0.04	00:20:44:57.000
0.01	0	0.03	00:20:45:12.000
0.01	0	0.03	00:20:45:27.000
0.01	0	0.03	00:20:45:42.000
0	0	0.03	00:20:45:57.000
0	0	0.03	00:20:46:12.000
0	0	0.03	00:20:46:27.000

J 73

Energy & Environmental Research
 Run 8B-65-3
 1 minute averaged data
 For 5-24-2001 @ 21:10:09.72

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.89	4.14	6.7	00:21:10:09.000
13.91	4.14	6.71	00:21:11:09.000
13.91	4.14	6.72	00:21:12:09.000
13.91	4.14	6.76	00:21:13:09.000
13.91	4.15	6.79	00:21:14:09.000
13.91	4.14	6.82	00:21:15:09.000
13.91	4.15	6.81	00:21:16:09.000
13.91	4.15	6.87	00:21:17:09.000
13.91	4.15	6.92	00:21:18:09.000
13.91	4.15	6.92	00:21:19:09.000
13.91	4.15	6.89	00:21:20:09.000
13.92	4.15	6.86	00:21:21:09.000
13.91	4.15	6.89	00:21:22:09.000
13.92	4.15	6.9	00:21:23:09.000
13.92	4.15	6.89	00:21:24:09.000
13.92	4.15	6.92	00:21:25:09.000
13.92	4.15	6.93	00:21:26:09.000
13.91	4.15	6.96	00:21:27:09.000
13.91	4.16	6.98	00:21:28:09.000
13.91	4.15	7.01	00:21:29:09.000
13.92	4.14	6.98	00:21:30:09.000
13.92	4.15	6.95	00:21:31:09.000
13.92	4.15	6.97	00:21:32:09.000
13.92	4.15	6.93	00:21:33:09.000
13.92	4.15	6.96	00:21:34:09.000
13.9132	4.148	6.8816	Average

J74

GE-Energy & Environmental Research
 Post 8B-65-3 Pre 8B-85-1
 15 sec Averaged data
 For 5-24-2001 @ 21:39:45.35

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.03	0	0.25	00:21:39:45.000
0.01	0	0.25	00:21:40:00.000
0.02	0	0.24	00:21:40:15.000
0.02	0	0.24	00:21:40:30.000
0.02	0	0.22	00:21:40:45.000
0.01	0	0.22	00:21:41:00.000
0.02	0	0.2	Zero
0.01	0	0.2	00:21:41:30.000
0.01	0	0.2	00:21:41:45.000
0.01	0	0.19	00:21:42:00.000
0.01	0	0.18	00:21:42:15.000
0.02	0	0.18	00:21:42:30.000
0.01	0	0.17	00:21:42:45.000
0.01	0	0.16	00:21:43:00.000
0.01	0	0.16	00:21:43:15.000
0.01	0.01	0.16	00:21:43:30.000
3.5	0.07	0.15	00:21:43:45.000
11.52	0.02	0.16	00:21:44:00.000
12.02	0	0.35	00:21:44:15.000
12.05	0	0.33	00:21:44:30.000
12.07	0	0.14	00:21:44:45.000
12.07	0	0.11	00:21:45:00.000
12.09	0	0.09	00:21:45:15.000
12.08	0	0.1	00:21:45:30.000
12.09	0	0.09	O2
12.09	0	0.08	00:21:46:00.000
12.08	0	0.08	00:21:46:15.000
12.08	0	0.08	00:21:46:30.000
10.86	0.98	0.08	00:21:46:45.000
1.41	7.42	0.1	00:21:47:00.000
0.08	7.99	0.11	00:21:47:15.000
0.03	8.03	0.11	00:21:47:30.000
0.02	8.04	0.08	00:21:47:45.000
0.01	8.05	0.08	00:21:48:00.000
0.01	8.06	0.08	CO2
0	8.07	0.07	00:21:48:30.000
0	8.07	0.07	00:21:48:45.000
-0.01	8.06	0.08	00:21:49:00.000
-0.01	8.07	0.06	00:21:49:15.000
0.02	7.55	0.08	00:21:49:30.000
0.13	1.43	0.21	00:21:49:45.000
0.03	0.16	1.36	00:21:50:00.000

J 75

GE-Energy & Environmental Research
 Post 8B-65-3 Pre 8B-85-1
 15 sec Averaged data
 For 5-24-2001 @ 21:39:45.35

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.02	0.08	6.44	00:21:50:15.000
0.01	0.06	9.42	00:21:50:30.000
0.02	0.05	9.99	00:21:50:45.000
0.01	0.03	10.09	00:21:51:00.000
0.01	0.03	10.15	00:21:51:15.000
0.02	0.03	10.03	00:21:51:30.000
0.01	0.02	10.01	00:21:51:45.000
0.01	0.02	10.01	00:21:52:00.000
0.02	0.02	10.03	
0.01	0.02	10.03	NOx 00:21:52:30.000

J 76

50% Load

J77

PLANT: Florida Power and Light RUN NUMBER 8B-50-1 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 15:20 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 15:44 CHECKED BY:
 START DATE: 5/24/01
 END DATE: 5/24/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, Cma	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, Cai	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, Ei	HIGH	0.1%	0.2%	0.1%		
Ei = ((Cma - Cai)/Span)x100%	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, Cbi	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	11.92	8.02	10.00		
	ZERO	0.07	0.00	0.03		
INITIAL SYSTEM CALIBRATION BIAS, Bi	UPSCALE	-0.3%	0.2%	0.0%		
Bi = ((Cbi-Cai)/Span)x100%	ZERO	0.3%	0.2%	0.0%		
FINAL BIAS CHECK, Cbf	UPSCALE	11.96	8.00	10.03		
(UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	ZERO	0.01	-0.02	0.09		
FINAL SYSTEM CALIBRATION BIAS, Bf	UPSCALE	-0.2%	0.0%	0.1%		
Bf = ((Cbf - Cai)/(Span))x100%	ZERO	0.0%	0.0%	0.3%		
DRIFT CHECK, D	UPSCALE	0.2%	-0.2%	0.1%		
D = ((Cbf - Cbi)/(Span))x100%	ZERO	-0.2%	-0.2%	0.3%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, Co		0.04	-0.01	0.06		
Co=(Cbi,zero+Cbf,zero)/2						
AVERAGE % BIAS	UPSCALE	-0.2%	0.1%	0.1%		
	ZERO	0.2%	0.1%	0.2%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, Cm		11.94	8.01	10.02		
Cm=(Cbi,upscale+Cbf,upscale)/2						
AVERAGE ANALYZER RESPONSE FROM DAS, Cavg		13.91	4.05	6.59		

RESULTS

DRIFT CORRECTED CONCENTRATION, Cgas=(Cavg-Co)xCma/(Cm-Co)	13.99	4.05	6.56		
15% O2 CORRECTION, C15% = Cgas*5.9 / (20.9- % O2)		3.46	5.60		

J 78

PLANT: Florida Power and Light RUN NUMBER 88-50-2 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 16:31 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 16:55 CHECKED BY:
 START DATE: 5/24/01
 END DATE: 5/24/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		%, dry	%, dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.1%	0.2%	0.1%		
	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, C _{bi} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	11.96	8.00	10.03		
	ZERO	0.01	-0.02	0.09		
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	-0.2%	0.0%	0.1%		
	ZERO	0.0%	0.0%	0.3%		
FINAL BIAS CHECK, C _{bf} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.08	8.03	10.17		
	ZERO	0.00	0.00	0.09		
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/(Span))x100%	UPSCALE	0.3%	0.3%	0.9%		
	ZERO	0.0%	0.2%	0.3%		
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/(Span))x100%	UPSCALE	0.5%	0.3%	0.7%		
	ZERO	0.0%	0.2%	0.0%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.01	-0.01	0.09		
AVERAGE % BIAS	UPSCALE	0.1%	0.1%	0.5%		
	ZERO	0.0%	0.1%	0.3%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		12.02	8.02	10.10		
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		14.06	4.06	6.57		

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	14.04	4.06	6.47		
15% O2 CORRECTION, C _{15%} = C _{gas} * 5.9 / (20.9 - % O2)		3.49	5.57		

J 79

PLANT: Florida Power and Light RUN NUMBER 8B-50-3 CEM OPERATOR: John Maxwell
 CITY, STATE: Martin Station RUN START TIME: 17:35 ENTERED BY: John Maxwell
 LOCATION: 8B Gas Turbine RUN END TIME: 17:59 CHECKED BY:
 START DATE: 5/24/01
 END DATE: 5/24/01 MAXIMUM RESPONSE TIME SEC. 65

SPECIES		O2	CO2	NOx		
LOCATION		Stack	Stack	Stack		
CONCENTRATION UNIT		% dry	% dry	ppmvd		
HIGH-RANGE GAS FRACTION OF SPAN		0.84	0.80	0.90		
SPAN		25	10	20		
SPAN GAS CONCENTRATION, C _{ma}	HIGH	21	8.00	18.00		
	MID	12.00	5.00	10.00		
	LO			6.00		
	ZERO	0.0	0.0	0.00		
INITIAL ANALYZER CALIBRATION CHECK, C _{ai}	HIGH	21.02	8.02	18.02		
	MID	11.92	4.96	10.09		
	LO			6.07		
	ZERO	0.00	-0.02	0.03		
RESPONSE TIME (SECONDS)		43	44	59		
INITIAL ANALYZER CALIBRATION ERROR, E _i E _i = ((C _{ma} - C _{ai})/Span)x100%	HIGH	0.1%	0.2%	0.1%		
	MID	-0.3%	-0.4%	0.4%		
	LO	N/A	N/A	0.4%		
	ZERO	N/A	-0.2%	0.2%		
INITIAL BIAS CHECK, C _{bi} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE HIGH (H), MID (M), or LO (L)	M	H	M		
	UPSCALE	12.08	8.03	10.17		
	ZERO	0.00	0.00	0.09		
INITIAL SYSTEM CALIBRATION BIAS, B _i B _i = ((C _{bi} - C _{ai})/Span)x100%	UPSCALE	0.3%	0.3%	0.9%		
	ZERO	0.0%	0.2%	0.3%		
FINAL BIAS CHECK, C _{bf} (UPSCALE CALIBRATION GAS CLOSEST TO EFFLUENT GAS CONCENTRATION)	UPSCALE	12.03	8.02	10.18		
	ZERO	0.02	0.01	0.06		
FINAL SYSTEM CALIBRATION BIAS, B _f B _f = ((C _{bf} - C _{ai})/(Span))x100%	UPSCALE	0.1%	0.2%	0.9%		
	ZERO	0.1%	0.3%	0.2%		
DRIFT CHECK, D D = ((C _{bf} - C _{bi})/(Span))x100%	UPSCALE	-0.2%	-0.1%	0.0%		
	ZERO	0.1%	0.1%	-0.2%		
AVERAGE BIAS RESPONSE FOR ZERO GAS, C _o C _o = (C _{bi,zero} + C _{bf,zero})/2		0.01	0.01	0.08		
AVERAGE % BIAS	UPSCALE	0.2%	0.2%	0.9%		
	ZERO	0.0%	0.3%	0.2%		
AVERAGE BIAS RESPONSE FOR UPSCALE GAS, C _m C _m = (C _{bi,upscale} + C _{bf,upscale})/2		12.06	8.03	10.18		
AVERAGE ANALYZER RESPONSE FROM DAS, C _{avg}		14.03	4.07	5.81		

RESULTS

DRIFT CORRECTED CONCENTRATION, C _{gas} = (C _{avg} - C _o) x C _{ma} / (C _m - C _o)	13.97	4.05	5.68		
15% O2 CORRECTION, C _{15%} = C _{gas} * 5.9 / (20.9 - % O2)		3.45	4.83		

J 80

GE-Energy & Environmental Research

Pre Test Bias Run 8B-50-1

15 sec Averaged data

For 5-24-2001 @ 13:26:45.12

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.06	0.04	0.01	00:13:26:45.004
1.76	0.27	0.86	00:13:27:00.004
2.89	0.36	4.86	00:13:27:15.004
0.18	0.02	6.25	00:13:27:30.004
0.08	0.02	4.82	00:13:27:45.004
0.07	0.01	1.06	00:13:28:00.004
0.07	0	0.05	00:13:28:15.004
0.08	0.01	0.04	00:13:28:30.004
0.08	0	0.04	00:13:28:45.004
0.07	0	0.03	Zero
0.07	0	0.04	00:13:29:15.004
0.06	-0.01	0.04	00:13:29:30.004
0.05	-0.01	0.03	00:13:29:45.004
0.05	-0.01	0.02	00:13:30:00.004
0.03	-0.01	0.01	00:13:30:15.004
0.04	-0.01	0.02	00:13:30:30.004
0.03	-0.01	0.02	00:13:30:45.004
0.03	-0.01	0.02	00:13:31:00.004
3.31	0.1	0.02	00:13:31:15.004
11.42	0.01	0.21	00:13:31:30.004
11.86	-0.01	0.29	00:13:31:45.004
11.88	-0.01	0.09	00:13:32:00.004
11.9	-0.01	0.04	00:13:32:15.004
11.91	-0.01	0.01	00:13:32:30.004
11.91	-0.01	0.02	00:13:32:45.004
11.92	-0.01	0.01	00:13:33:00.004
11.92	-0.01	0.02	00:13:33:15.004
11.93	-0.01	0.02	00:13:33:30.004
11.92	-0.01	0.02	O2
11.93	-0.01	0.01	00:13:34:15.004
11.93	-0.01	0.02	00:13:34:30.004
11.91	-0.01	0.01	00:13:34:45.004
11.93	-0.01	0.01	00:13:35:00.004
7.42	3.53	0.02	00:13:35:15.004
0.31	7.83	0.06	00:13:35:30.004
0.07	7.94	0.09	00:13:35:45.004
0.04	7.98	0.02	00:13:36:00.004
0.03	7.99	0.02	00:13:36:15.004
0.03	8	0.02	00:13:36:30.004
0.02	8.01	0.01	00:13:36:45.004
0.02	8.01	0.02	00:13:37:00.004

J 81

GE-Energy & Environmental Research

Pre Test Bias Run 8B-50-1

15 sec Averaged data

For 5-24-2001 @ 13:26:45.12

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.02	8.02	0.02	00:13:37:15.004
0.01	8.02	0.02	CO2
0.01	8.02	0.02	00:13:37:45.004
0	8.01	0.01	00:13:38:00.004
0.01	8.01	0.02	00:13:38:15.004
0.01	8.02	0.02	00:13:38:30.004
0.04	2.89	0.02	00:13:38:45.004
0.03	0.19	0.74	00:13:39:00.004
0.02	0.09	5.48	00:13:39:15.004
0.03	0.06	8.91	00:13:39:30.004
0.03	0.05	9.65	00:13:39:45.004
0.03	0.04	9.82	00:13:40:00.004
0.02	0.03	9.86	00:13:40:15.004
0.02	0.02	9.88	00:13:40:30.004
0.03	0.02	9.89	00:13:40:45.004
0.02	0.01	9.93	00:13:41:00.004
0.02	0.01	9.98	00:13:41:15.004
0.02	0.01	10	NOx
0.01	0.01	9.99	00:13:41:45.004
0.02	0.01	9.97	00:13:42:00.004
0.01	0.01	9.97	00:13:42:15.004
0.02	0	9.98	00:13:42:30.004
0.01	0	9.99	00:13:42:45.004
0.01	0	9.99	00:13:43:00.004
0.01	0	10	00:13:43:15.004
0.01	0	9.98	00:13:43:30.004
0.01	0	9.97	00:13:43:45.004
0.01	0	9.97	00:13:44:00.004
0	0.01	10.13	00:13:44:15.004
0	0.01	6.44	00:13:44:30.004
0	0.01	2	00:13:44:45.004
-0.01	0.01	0.93	00:13:45:00.004
-0.02	0	0.39	00:13:45:15.004
-0.02	0	0.14	00:13:45:30.004
-0.02	0	0.08	00:13:45:45.004
-0.03	0	0.07	00:13:46:00.004
-0.03	0	0.05	00:13:46:15.004

J 82

Energy & Environmental Research
Run 8B-50-1
1 minute averaged data
For 5-24-2001 @ 15:20:16.10

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
13.93	4.04	6.6	00:15:20:16.004
13.9	4.04	6.59	00:15:21:16.004
13.9	4.04	6.57	00:15:22:16.004
13.9	4.05	6.61	00:15:23:16.004
13.9	4.05	6.58	00:15:24:16.004
13.9	4.05	6.64	00:15:25:16.004
13.9	4.05	6.57	00:15:26:16.004
13.9	4.05	6.59	00:15:27:16.004
13.89	4.05	6.58	00:15:28:16.004
13.9	4.05	6.62	00:15:29:16.004
13.9	4.05	6.61	00:15:30:16.004
13.91	4.05	6.59	00:15:31:16.004
13.91	4.05	6.59	00:15:32:16.004
13.9	4.05	6.62	00:15:33:16.004
13.9	4.05	6.6	00:15:34:16.004
13.91	4.05	6.62	00:15:35:16.004
13.91	4.05	6.57	00:15:36:16.004
13.91	4.05	6.62	00:15:37:16.004
13.91	4.05	6.59	00:15:38:16.004
13.91	4.05	6.6	00:15:39:16.004
13.91	4.05	6.6	00:15:40:16.004
13.91	4.06	6.61	00:15:41:16.004
13.91	4.06	6.61	00:15:42:16.004
13.91	4.06	6.58	00:15:43:16.004
13.91	4.06	6.61	00:15:44:16.004
13.9056	4.0504	6.5988	Average

J 83

GE-Energy & Environmental Research
 Post 8B-50-1 Pre 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 15:47:54.85

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
21.36	-0.01	0.16	00:15:47:54.004
21.35	-0.01	0.16	00:15:48:09.004
21.35	-0.01	0.16	00:15:48:24.004
21.29	0	0.14	00:15:48:39.004
21.25	0.02	0.14	00:15:48:54.004
21.23	0.02	0.11	00:15:49:09.004
21.3	0.03	0.31	00:15:49:24.004
18.56	0.02	0.61	00:15:49:39.004
1.7	-0.01	0.34	00:15:49:54.004
0.24	0	0.2	00:15:50:09.004
0.12	-0.01	0.16	00:15:50:24.004
0.07	-0.01	0.14	00:15:50:39.004
0.06	-0.01	0.13	00:15:50:54.004
0.05	-0.01	0.13	00:15:51:09.004
0.05	-0.01	0.11	00:15:51:24.004
0.08	-0.01	0.11	00:15:51:39.004
0.03	-0.01	0.11	00:15:51:54.004
0.02	-0.01	0.12	00:15:52:09.004
0.02	-0.01	0.11	00:15:52:24.004
0.02	-0.01	0.11	00:15:52:39.004
0.02	-0.02	0.09	00:15:52:54.004
0.01	-0.02	0.09	Zero
0.02	-0.02	0.09	00:15:53:24.004
0.02	-0.02	0.09	00:15:53:39.004
0.02	-0.02	0.09	00:15:53:54.004
0.02	-0.02	0.09	00:15:54:09.004
0.01	-0.02	0.1	00:15:54:24.004
0.01	-0.02	0.09	00:15:54:39.004
0.01	-0.02	0.07	00:15:54:54.004
-0.01	-0.01	0.07	00:15:55:09.004
-0.01	-0.01	0.07	00:15:55:24.004
0.01	-0.01	0.07	00:15:55:39.004
6.32	0.06	0.14	00:15:55:54.004
11.37	0	0.34	00:15:56:09.004
11.75	-0.01	0.3	00:15:56:24.004
11.81	-0.01	0.16	00:15:56:39.004
11.83	-0.01	0.13	00:15:56:54.004
11.93	-0.01	0.1	00:15:57:09.004
11.94	-0.01	0.09	00:15:57:24.004
11.96	-0.01	0.1	O2
11.96	-0.01	0.09	00:15:57:54.004
11.96	-0.01	0.07	00:15:58:09.004

J84

GE-Energy & Environmental Research
 Post 8B-50-1 Pre 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 15:47:54.85

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
11.96	-0.01	0.07	00:15:58:24.004
11.96	-0.01	0.07	00:15:58:39.004
11.97	-0.01	0.07	00:15:58:54.004
11.96	-0.01	0.07	00:15:59:09.004
11.97	-0.01	0.07	00:15:59:24.004
11.97	-0.01	0.08	00:15:59:39.004
11.97	-0.01	0.07	00:15:59:54.004
11.97	-0.01	0.07	00:16:00:09.004
11.97	-0.01	0.05	00:16:00:24.004
11.98	-0.01	0.05	00:16:00:39.004
11.97	-0.01	0.05	00:16:00:54.004
11.98	-0.01	0.05	00:16:01:09.004
11.98	-0.01	0.05	00:16:01:24.004
11.97	-0.01	0.05	00:16:01:39.004
12.01	-0.01	0.05	00:16:01:54.004
8.51	2.52	0.06	00:16:02:09.004
0.6	7.64	0.07	00:16:02:24.004
0.05	7.93	0.07	00:16:02:39.004
0.01	7.96	0.05	00:16:02:54.004
0.01	7.98	0.05	00:16:03:09.004
0	7.99	0.03	00:16:03:24.004
-0.01	7.99	0.03	00:16:03:39.004
-0.02	8	0.03	00:16:03:54.004
-0.02	8	0.03	CO2
-0.02	8	0.03	00:16:04:24.004
-0.03	8	0.03	00:16:04:39.004
-0.03	7.99	0.03	00:16:04:54.004
-0.01	7.94	0.03	00:16:05:09.004
0.19	2.4	0.02	00:16:05:24.004
0.03	0.2	1.27	00:16:05:39.004
0.01	0.07	4.24	00:16:05:54.004
0.01	0.05	7.91	00:16:06:09.004
0	0.03	9.88	00:16:06:24.004
0.01	0.02	9.87	00:16:06:39.004
0	0.02	9.93	00:16:06:54.004
0.01	0.01	9.97	00:16:07:09.004
0	0.01	9.99	00:16:07:24.004
0	0	9.99	00:16:07:39.004
0	0	10.02	00:16:07:54.004
-0.01	0	10.03	00:16:08:09.004
0	0	10.03	00:16:08:24.004
-0.01	0	10.03	00:16:08:39.004

J 85

GE-Energy & Environmental Research
 Post 8B-50-1 Pre 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 15:47:54.85

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0	-0.01	10.03	00:16:08:54.004
0.01	-0.01	10.03	NOx
0	-0.01	10.03	00:16:09:24.004
0	-0.01	10.03	00:16:09:39.004
-0.01	-0.01	10.03	00:16:09:54.004
-0.03	0	10.03	00:16:10:09.004
0	0	9.99	00:16:10:24.004
0.01	0.03	9.96	00:16:10:39.004
0.01	0.03	9.18	00:16:10:54.004
0.82	0.2	6.14	00:16:11:09.004
3.56	1.8	3.31	00:16:11:24.004
4.29	2.16	1.38	00:16:11:39.004
5.04	2.24	1.91	00:16:11:54.004
6.74	2.22	3.56	00:16:12:09.004
8.07	2.25	2.9	00:16:12:24.004
7.9	2.42	1.38	00:16:12:39.004
6.63	2.46	0.77	00:16:12:54.004
5.42	2.34	0.55	00:16:13:09.004
4.45	2.18	0.46	00:16:13:24.004
3.85	2.03	0.31	00:16:13:39.004
3.47	1.92	0.2	00:16:13:54.004
3.19	1.85	0.13	00:16:14:09.004
2.88	1.8	0.08	00:16:14:24.004
2.79	1.73	0.07	00:16:14:39.004
2.72	1.71	0.05	00:16:14:54.004
2.6	1.71	0.05	00:16:15:09.004
2.6	1.67	0.05	00:16:15:24.004
2.35	1.71	0.05	00:16:15:39.004
2.44	1.7	0.04	00:16:15:54.004
2.5	1.69	0.03	00:16:16:09.004
2.43	1.68	0.04	00:16:16:24.004
2.45	1.67	0.03	00:16:16:39.004
2.38	1.67	0.03	00:16:16:54.004
2.24	1.66	0.03	00:16:17:09.004
2.24	1.7	0.03	00:16:17:24.004
2.26	1.66	0.03	00:16:17:39.004
2.39	1.65	0.04	00:16:17:54.004
2.26	1.64	0.03	00:16:18:09.004
2.24	1.65	0.03	00:16:18:24.004
2.19	1.66	0.04	00:16:18:39.004
2.32	1.69	0.05	00:16:18:54.004
2.46	1.69	0.06	00:16:19:09.004

J 86

GE-Energy & Environmental Research
 Run 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 16:31:07.94

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
14.05	4.05	6.47	0.23	-0.02	00:16:31:07.004
14.05	4.05	6.47	0.23	-0.06	00:16:31:22.004
14.05	4.05	6.5	0.24	-0.05	00:16:31:37.004
14.05	4.05	6.48	0.23	-0.04	00:16:31:52.004
14.06	4.05	6.52	0.23	-0.05	00:16:32:07.004
14.05	4.05	6.49	0.23	-0.02	00:16:32:22.004
14.05	4.06	6.46	0.23	-0.03	00:16:32:37.004
14.05	4.05	6.51	0.24	-0.04	00:16:32:52.004
14.05	4.05	6.56	0.25	-0.02	00:16:33:07.004
14.05	4.06	6.57	0.25	0	00:16:33:22.004
14.06	4.05	6.51	0.26	0	00:16:33:37.004
14.05	4.05	6.47	0.3	0	00:16:33:52.004
14.05	4.06	6.5	0.31	-0.01	00:16:34:07.004
14.05	4.06	6.54	0.29	-0.01	00:16:34:22.004
14.06	4.06	6.56	0.28	0.02	00:16:34:37.004
14.06	4.06	6.5	0.25	0.01	00:16:34:52.004
14.06	4.05	6.5	0.24	0.02	00:16:35:07.004
14.06	4.06	6.52	0.23	0	00:16:35:22.004
14.05	4.06	6.57	0.23	0	00:16:35:37.004
14.06	4.06	6.61	0.25	-0.01	00:16:35:52.004
14.05	4.06	6.59	0.25	-0.01	00:16:36:07.004
14.06	4.06	6.55	0.25	-0.01	00:16:36:22.004
14.05	4.06	6.53	0.25	-0.02	00:16:36:37.004
14.06	4.05	6.56	0.26	-0.02	00:16:36:52.004
14.05	4.06	6.55	0.32	-0.04	00:16:37:07.004
14.06	4.06	6.53	0.38	-0.03	00:16:37:22.004
14.06	4.06	6.53	0.43	-0.05	00:16:37:37.004
14.06	4.06	6.57	0.45	-0.01	00:16:37:52.004
14.05	4.07	6.57	0.42	-0.05	00:16:38:07.004
14.06	4.06	6.6	0.41	-0.07	00:16:38:22.004
14.05	4.06	6.59	0.4	-0.06	00:16:38:37.004
14.05	4.06	6.53	0.37	-0.06	00:16:38:52.004
14.06	4.06	6.56	0.38	-0.08	00:16:39:07.004
14.06	4.06	6.57	0.39	-0.07	00:16:39:22.004
14.05	4.07	6.55	0.37	-0.09	00:16:39:37.004
14.07	4.06	6.6	0.35	-0.09	00:16:39:52.004
14.06	4.06	6.59	0.35	-0.08	00:16:40:07.004
14.07	4.06	6.62	0.33	-0.08	00:16:40:22.004
14.07	4.06	6.63	0.32	-0.09	00:16:40:37.004
14.06	4.06	6.56	0.29	-0.1	00:16:40:52.004
14.06	4.06	6.56	0.29	-0.1	00:16:41:07.004
14.06	4.06	6.56	0.29	-0.09	00:16:41:22.004

J 87

GE-Energy & Environmental Research
 Run 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 16:31:07.94

O2	CO2	NOx	CO	THC	TIME
Percent	Percent	ppmv	ppm	ppm	HH:MM:SS
14.06	4.06	6.57	0.27	-0.09	00:16:41:37.004
14.06	4.06	6.61	0.27	-0.1	00:16:41:52.004
14.06	4.06	6.56	0.28	-0.1	00:16:42:07.004
14.05	4.07	6.56	0.28	-0.1	00:16:42:22.004
14.07	4.06	6.59	0.26	-0.1	00:16:42:37.004
14.06	4.06	6.61	0.27	-0.1	00:16:42:52.004
14.07	4.06	6.62	0.25	-0.1	00:16:43:07.004
14.07	4.06	6.58	0.26	-0.11	00:16:43:22.004
14.06	4.06	6.55	0.27	-0.11	00:16:43:37.004
14.06	4.06	6.59	0.28	-0.11	00:16:43:52.004
14.06	4.06	6.66	0.26	-0.11	00:16:44:07.004
14.05	4.07	6.64	0.25	-0.12	00:16:44:22.004
14.06	4.06	6.59	0.25	-0.1	00:16:44:37.004
14.07	4.07	6.62	0.25	-0.1	00:16:44:52.004
14.08	4.07	6.63	0.27	-0.15	00:16:45:07.004
14.06	4.06	6.65	0.27	-0.1	00:16:45:22.004
14.06	4.07	6.66	0.27	-0.1	00:16:45:37.004
14.06	4.07	6.61	0.27	-0.11	00:16:45:52.004
14.06	4.07	6.56	0.28	-0.12	00:16:46:07.004
14.06	4.07	6.56	0.27	-0.11	00:16:46:22.004
14.05	4.07	6.59	0.26	-0.12	00:16:46:37.004
14.06	4.07	6.63	0.25	-0.12	00:16:46:52.004
14.06	4.07	6.61	0.27	-0.11	00:16:47:07.004
14.06	4.07	6.59	0.27	-0.11	00:16:47:22.004
14.06	4.07	6.55	0.28	-0.12	00:16:47:37.004
14.1	4.07	6.55	0.27	-0.06	00:16:47:52.004
14.06	4.06	6.56	0.26	-0.01	00:16:48:07.004
14.06	4.06	6.57	0.26	0	00:16:48:22.004
14.06	4.06	6.57	0.25	0	00:16:48:37.004
14.06	4.06	6.61	0.26	0	00:16:48:52.004
14.07	4.07	6.57	0.29	0.01	00:16:49:07.004
14.05	4.07	6.59	0.29	0	00:16:49:22.004
14.07	4.06	6.61	0.29	0.01	00:16:49:37.004
14.07	4.07	6.61	0.28	0.01	00:16:49:52.004
14.07	4.06	6.55	0.27	0.01	00:16:50:07.004
14.07	4.06	6.54	0.26	0.02	00:16:50:22.004
14.09	4.07	6.55	0.26	-0.06	00:16:50:37.004
14.1	4.07	6.55	0.27	-0.05	00:16:50:52.004
14.05	4.08	6.59	0.27	0.01	00:16:51:07.004
14.21	4.08	6.61	0.28	-0.05	00:16:51:22.004
14.22	4.07	6.58	0.31	-0.6	00:16:51:37.004
14.14	4.08	6.54	0.31	-0.05	00:16:51:52.004

J88

GE-Energy & Environmental Research
 Run 8B-50-2
 15 sec Averaged data
 For 5-24-2001 @ 16:31:07.94

O2 Percent	CO2 Percent	NOx ppmv	CO ppm	THC ppm	TIME HH:MM:SS
14.1	4.07	6.58	0.3	-0.06	00:16:52:07.004
14.06	4.06	6.58	0.3	0.01	00:16:52:22.004
14.06	4.07	6.58	0.3	0.01	00:16:52:37.004
14.06	4.06	6.58	0.29	0	00:16:52:52.004
14.06	4.07	6.53	0.28	0.01	00:16:53:07.004
14.05	4.07	6.54	0.28	0.01	00:16:53:22.004
14.05	4.08	6.59	0.28	0.01	00:16:53:37.004
14.05	4.08	6.65	0.28	0	00:16:53:52.004
14.05	4.07	6.61	0.29	0	00:16:54:07.004
14.06	4.07	6.57	0.33	0	00:16:54:22.004
14.07	4.06	6.58	0.37	0	00:16:54:37.004
14.05	4.07	6.62	0.38	0.01	00:16:54:52.004
14.06	4.07	6.64	0.41	0	00:16:55:07.004
14.06	4.07	6.59	0.41	-0.01	00:16:55:22.004
14.05	4.07	6.57	0.4	-0.01	00:16:55:37.004
14.06384	4.06303	6.569293	0.290808	-0.052121	Average

J89

GE-Energy & Environmental Research
 Post 8B-50-2 Pre 8B-50-3
 15 sec Averaged data
 For 5-24-2001 @ 16:59:05.86

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.03	0.01	0.24	00:16:59:05.004
0.04	0	0.24	00:16:59:20.004
0.02	0	0.22	00:16:59:35.004
0.02	0	0.21	00:16:59:50.004
0.01	0	0.21	00:17:00:05.004
0.02	0	0.2	00:17:00:20.004
0.01	0	0.2	00:17:00:35.004
0.01	0	0.2	00:17:00:50.004
0.01	0	0.18	00:17:01:05.004
0	0	0.18	Zero
0.01	0	0.17	00:17:01:35.004
2.89	0.05	0.18	00:17:01:50.004
11.3	0.01	0.16	00:17:02:05.004
12	0	0.15	00:17:02:20.004
12.05	0	0.22	00:17:02:35.004
12.07	0	0.16	00:17:02:50.004
12.08	0	0.12	00:17:03:05.004
12.08	-0.01	0.11	O2
12.09	0	0.1	00:17:03:35.004
12.08	0	0.09	Zero
12.07	0	0.09	00:17:04:05.004
12.08	0	0.09	00:17:04:20.004
8.04	3.07	0.09	00:17:04:35.004
0.52	7.78	0.09	00:17:04:50.004
0.05	7.97	0.1	00:17:05:05.004
0.02	8	0.1	00:17:05:20.004
0.01	8.02	0.09	00:17:05:35.004
0.01	8.02	0.09	00:17:05:50.004
0	8.03	0.08	CO2
0	8.03	0.08	00:17:06:20.004
-0.01	8.04	0.08	00:17:06:35.004
0	8.04	0.07	00:17:06:50.004
0	8.04	0.07	00:17:07:05.004
-0.01	8.03	0.08	00:17:07:20.004
-0.01	8.04	0.07	00:17:07:35.004
0.13	4.38	0.1	00:17:07:50.004
0.05	0.37	0.24	00:17:08:05.004
0.02	0.1	4.07	00:17:08:20.004
0.01	0.06	8.34	00:17:08:35.004
0.01	0.04	9.71	00:17:08:50.004
0.01	0.04	10.05	00:17:09:05.004
0.01	0.03	10.07	00:17:09:20.004

J 90

GE-Energy & Environmental Research
Post 8B-50-2 Pre 8B-50-3
15 sec Averaged data
For 5-24-2001 @ 16:59:05.86

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.01	0.03	10.11	00:17:09:35.004
0.01	0.02	10.13	00:17:09:50.004
0.01	0.02	10.15	00:17:10:05.004
0.01	0.01	10.16	00:17:10:20.004
0.01	0.01	10.17	NOx
0.01	0.01	10.17	00:17:10:50.004
-0.01	0.01	10.17	00:17:11:05.004
0.01	0.02	10.18	00:17:11:20.004
-0.01	0.03	7.81	00:17:11:35.004
0.15	0.05	1.5	00:17:11:50.004
0	0.06	0.3	00:17:12:05.004
-0.01	0.13	0.04	00:17:12:20.004

J91

Energy & Environmental Research
 Run 8B-50-3
 1 minute averaged data
 For 5-24-2001 @ 17:35:09.43

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
14.08	4.06	0.04	00:17:35:09.004
14.09	4.07	0.02	00:17:36:09.004
14.06	4.07	0.03	00:17:37:09.004
14.01	4.07	3.81	00:17:38:09.004
14.02	4.07	6.72	00:17:39:09.004
14.02	4.07	6.7	00:17:40:09.004
14.01	4.07	6.7	00:17:41:09.004
14.02	4.07	6.7	00:17:42:09.004
14.02	4.07	6.68	00:17:43:09.004
14.01	4.07	6.66	00:17:44:09.004
14.02	4.07	6.68	00:17:45:09.004
14.02	4.07	6.71	00:17:46:09.004
14.02	4.07	6.75	00:17:47:09.004
14.02	4.07	6.73	00:17:48:09.004
14.03	4.06	6.72	00:17:49:09.004
14.02	4.07	6.74	00:17:50:09.004
14.02	4.07	6.76	00:17:51:09.004
14.02	4.07	6.78	00:17:52:09.004
14.02	4.08	6.81	00:17:53:09.004
14.03	4.07	6.75	00:17:54:09.004
14.03	4.07	6.73	00:17:55:09.004
14.03	4.07	6.75	00:17:56:09.004
14.04	4.07	6.75	00:17:57:09.004
14.03	4.08	6.74	00:17:58:09.004
14.03	4.07	6.72	00:17:59:09.004
14.0288	4.07	5.8072	Average

J 92

GE-Energy & Environmental Research

Post 8B-50-2 Pre 8B-50-3

15 sec Averaged data

For 5-24-2001 @ 16:59:05.86

O2 Percent	CO2 Percent	NOx ppmv	TIME HH:MM:SS
0.03	0.01	0.24	00:16:59:05.004
0.04	0	0.24	00:16:59:20.004
0.02	0	0.22	00:16:59:35.004
0.02	0	0.21	00:16:59:50.004
0.01	0	0.21	00:17:00:05.004
0.02	0	0.2	00:17:00:20.004
0.01	0	0.2	00:17:00:35.004
0.01	0	0.2	00:17:00:50.004
0.01	0	0.18	00:17:01:05.004
0	0	0.18	Zero
0.01	0	0.17	00:17:01:35.004
2.89	0.05	0.18	00:17:01:50.004
11.3	0.01	0.16	00:17:02:05.004
12	0	0.15	00:17:02:20.004
12.05	0	0.22	00:17:02:35.004
12.07	0	0.16	00:17:02:50.004
12.08	0	0.12	00:17:03:05.004
12.08	-0.01	0.11	O2
12.09	0	0.1	00:17:03:35.004
12.08	0	0.09	Zero
12.07	0	0.09	00:17:04:05.004
12.08	0	0.09	00:17:04:20.004
8.04	3.07	0.09	00:17:04:35.004
0.52	7.78	0.09	00:17:04:50.004
0.05	7.97	0.1	00:17:05:05.004
0.02	8	0.1	00:17:05:20.004
0.01	8.02	0.09	00:17:05:35.004
0.01	8.02	0.09	00:17:05:50.004
0	8.03	0.08	CO2
0	8.03	0.08	00:17:06:20.004
-0.01	8.04	0.08	00:17:06:35.004
0	8.04	0.07	00:17:06:50.004
0	8.04	0.07	00:17:07:05.004
-0.01	8.03	0.08	00:17:07:20.004
-0.01	8.04	0.07	00:17:07:35.004
0.13	4.38	0.1	00:17:07:50.004
0.05	0.37	0.24	00:17:08:05.004
0.02	0.1	4.07	00:17:08:20.004
0.01	0.06	8.34	00:17:08:35.004
0.01	0.04	9.71	00:17:08:50.004
0.01	0.04	10.05	00:17:09:05.004
0.01	0.03	10.07	00:17:09:20.004

J93

GE-Energy & Environmental Research
 Post 8B-50-2 Pre 8B-50-3
 15 sec Averaged data
 For 5-24-2001 @ 16:59:05.86

O2	CO2	NOx	TIME
Percent	Percent	ppmv	HH:MM:SS
0.01	0.03	10.11	00:17:09:35.004
0.01	0.02	10.13	00:17:09:50.004
0.01	0.02	10.15	00:17:10:05.004
0.01	0.01	10.16	00:17:10:20.004
0.01	0.01	10.17	NOx
0.01	0.01	10.17	00:17:10:50.004
-0.01	0.01	10.17	00:17:11:05.004
0.01	0.02	10.18	00:17:11:20.004
-0.01	0.03	7.81	00:17:11:35.004
0.15	0.05	1.5	00:17:11:50.004
0	0.06	0.3	00:17:12:05.004
-0.01	0.13	0.04	00:17:12:20.004
1.61	0.08	0.03	00:17:12:35.004
1.44	0.03	0.03	00:17:12:50.004
0.28	0.02	0.03	00:17:13:05.004

J 94

Appendix K

Unit 8B
MOISTURE DATA SHEETS

88-65-1

GE EER

Field Data - Method 4 Moisture Run No. 4 Load _____

Project ID GE PPSD Martin Station Noz. ID/Dia. NA 1 (inch) O2 _____
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO2 _____
 City Indiantown, FL Meter Calibration (Y) 1.0079 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # 8B Meter delta H @ 1.7963 Barometric Pressure 29.61 (in Hg)
 Run Date 015-25-015-2401 Pitot Tube No. NA Cp NA Pretest Leak Rate .002 cfm @ 5 (in. Hg)
 Operator DE Probe Length _____ TC No. _____ Post Test Leak Rate .002 cfm @ 6 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material Stainless Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pr II
	0	1845	1142		3.0	226.748	80	67		
	6				3.0	232.36	81	53		
	12				3.0	237.96	82	54		
	18				3.0	243.60	82	56		
	24	1909				249.140				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.	min./hr

K-1

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals	
Final	772.1	688.6	605.1	916.3		DSCF
Initial	738.7	687.2	602.3	908.5		bws
net	33.4	1.4	2.8	7.8	45.4	moistu (0.04)

8B65-2

GE EER

Field Data - Method 4 Moisture Run No. 5 Load _____

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / _____ (inch) O2 _____
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO2 _____
 City Indiantown, FL Meter Calibration (Y) 1.0079 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # 8B Meter delta H @ 1.7963 Barometric Pressure 29.61 (in Hg)
 Run Date 8-5-25-01 5:24:01 Pitot Tube No. NA Cp NA Pretest Leak Rate .001 cfm @ 5 (in. Hg)
 Operator DE Probe Length _____ TC No. _____ Post Test Leak Rate .002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material stainless Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			Pi F
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
	0	1955	1142		3.0	249.434	80	66		
	6				3.0	255.90	80	55		
	12				3.0	262.36	81	57		
	18				3.0	268.82	82	58		
	24	2029 2017				271.767				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 61	max.	

K-2

Impinger Weights	1st (water)			2nd (water)			3rd (empty)			last (silica gel)			totals
	Final	Initial	net	Final	Initial	net	Final	Initial	net	Final	Initial	net	
	753.1	715.7	37.4	630.4	624.8	5.6	616.1	616.1	0	793.4	786.5	6.9	49.9

DSCF
bws
moistu
(0.047)

BB-65-3

GE EER

Field Data - Method 4 Moisture Run No. 6 Load _____

Project ID GE PPSD Martin Station
 Plant FP&L
 City Indiantown, FL
 Location Stack to Unit # 8B
 Run Date 05-29-82
 Operator DE
 Assumed Gas Moisture 10

Meter Box Number NCA-1
 Meter Calibration (Y) 1,0079
 Meter delta H @ 1,7963
 Pitot Tube No. NA Cp NA
 Probe Length _____ TC No. _____
 % Probe Liner Material stainless

Noz. ID/Dia. NA / _____ (inch)
 Filter Number NA
 Static Pressure NA (in. H₂O)
 Barometric Pressure 29.61 (in. Hg)
 Pretest Leak Rate 1.003 cfm @ _____ (in. Hg)
 Post Test Leak Rate .603 cfm @ _____ (in. Hg)
 Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pro He
	0	2110	1142		3.0	271.952	78	67		
	6				3.0	277.50	79	55		
	12				3.0	283.20	79	56		
	18				3.0	288.70	79	57		
	24	2135 2134				294.267				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64		

K-3

Impinger Weights	80		
	1st (water)	2nd (water)	3rd (empty)
Final	772.1	688.6	605.1
Initial	807.1	692.8	607.1
net	35	4.2	2

	1st (silica gel)	
	916.3	
	922.7	
	6.4	

totals
47.6

DSCF
bws
moistur
(0.047)

8B-85-1

GE EER

Field Data - Method 4 Moisture Run No. 7 Load _____

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / _____ (inch) O2 _____
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO₂ _____
 City Indiantown, FL Meter Calibration (Y) 1,0079 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # Meter delta H @ 1.7963 Barometric Pressure 29.61 (in Hg)
 Run Date 5-24-01 Pitot Tube No. NA Cp NA Pretest Leak Rate 1.001 cfm @ 5 (in. Hg)
 Operator DE Probe Length _____ TC No. _____ Post Test Leak Rate 1.002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material stainless Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pr H
	0	2220	1142		3.0	294.648	76	60		
	6				3.0	300.22	77	52		
	12				3.0	305.82	78	59		
	18				3.0	311.42	78	62		
	24	2204 2244				317.023 316.978				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.	min/max

R-4

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	791.4	634.0	618.4	799.9	DSCF
Initial	753.1	630.4	616.1	793.4	tws
net	38.3	3.6	2.3	6.5	50.7 moisture (0.047)

GE EER

Field Data - Method 4 Moisture Run No. 8B-85-2 Load

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0075 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Measured by NA
 Location Stack to Unit # 8B Pitot Tube No. NA Cp NA Barometric Pressure 29.61 (in. Hg)
 Run Date 5-24-01 Probe Length NA TC No. NA Pretest Leak Rate .003 cfm @ 5 (in. Hg)
 Operator DE Assumed Gas Moisture 10 % Probe Liner Material stainless Post Test Leak Rate .003 cfm @ 7 (in. Hg)
 Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe
	0	2328	1142		3.0	317.246	76	60		
	6				3.0	322.80	77	56		
	12				3.0	328.35	78	61		
	18				3.0	333.70	78	66		
	24	2352 2352				339.515				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.	max

K-5

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	772.6	696.6	607.5	929.0	
Initial	733.9	692.8	607.1	922.7	
net	38.7	3.8	.4	6.3	49.2

DSCF
bws
moisture
(0.0470)

GE EER

Field Data - Method 4 Moisture Run No. 9 Load _____

8B-85-3

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / _____ (inch) O2 _____
 Plant FP&L Meter Box Number NCA-1 Filter Number NA CO2 _____
 City Indiantown, FL Meter Calibration (Y) 1.0019 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # Meter delta H @ 1.7963 Barometric Pressure 29.61 (in Hg)
 Run Date 5-25-01 Pitot Tube No. NA Cp NA Pretest Leak Rate .001 cfm @ 5 (in. Hg)
 Operator DE Probe Length _____ TC No. _____ Post Test Leak Rate .002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material stainless Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			Pr H
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
	0	025	1142		3.0	339.956	75	56		
	6				3.0	345.50	76	51		
	12				3.0	351.12	77	53		
	18				3.0	356.70	78	54		
	24	049				362.331				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64	max.	min/max

K-6

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	1st (silica gel)	totals
Final	832.1	639.1	620.2	800.7	DSCF
Initial	791.4	634.0	618.4	799.9	bws
net	40.7	5.1	1.8	6.8	moistu (0.047)

544

8B-50-1

GE EER

Field Data - Method 4 Moisture Run No. 7 Load 50

Project ID GE PPSD Martin Station
 Plant FP&L
 City Indiantown, FL
 Location Stack to Unit # 8B
 Run Date 5-24-01
 Operator DE BG
 Assumed Gas Moisture 10 % Probe Liner Material Stainless

Meter Box Number NCA-1
 Meter Calibration (Y) 1.0079
 Meter delta H @ 1.7963
 Pitot Tube No. NA Cp NA
 Probe Length TC No.

Noz. ID/Dia. NA / 1 (inch)
 Filter Number NA
 Static Pressure NA (in. H₂O)
 Barometric Pressure 29.67 (in Hg)
 Pretest Leak Rate .001 cfm @ 5 (in. Hg)
 Post Test Leak Rate .002 cfm @ 7 (in. Hg)
 Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe
	0	1519	1200		2	160.677	77	64		
	56				2.400	165.16	81	62		
	1014				2.4	171.70	82	63		
	1518				2.4	175.00	82	62		
	2024				2.6	180.00	82	63		
	25	1220	1200							
		1543								
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 61	max.	min/max

K-7

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	1st (silica gel)	totals
Final	896.4	619.2	615.8	799.1	DSCF
Initial	859.5	616.7	612.4	793.0	bws
net	36.9	2.5	3.4	6.1	48.9 moisture (0.0470)

GE EER

Field Data - Method 4 Moisture Run No. 2 Load 5C

88-50-2

Project ID GE PPSD Martin Station Meter Box Number NCA-1 Noz. ID/Dia. NA / NA (inch) O2 NA
 Plant FP&L Meter Calibration (Y) 1.0079 Filter Number NA CO2 NA
 City Indiantown, FL Meter delta H @ 1.7963 Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # Meter delta H @ 1.7963 Barometric Pressure 29.61 (in. Hg)
 Run Date 5-29-01 Pitot Tube No. NA Cp NA Pretest Leak Rate .002 cfm @ 5 (in. Hg)
 Operator DE Probe Length NA TC No. NA Post Test Leak Rate .002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material Stainless Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pr H
	0	1630	1194		3	181.500	81	67		
	6				3	186.73	82	57		
	12				3	192.20	83	59		
	18				3	197.80	84	62		
	24	1654				203.437				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.	min/max

K-8

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	1st (silica gel)	totals
Final	738.7	687.2	602.3	908.5	
Initial	693.2	695.2	601.0	902.5	
net	45.5	17.1	1.3	6.0	69.9

DSCF
bws
moistu
(0.047)

8B-50-3

GE EER

Field Data - Method 4 Moisture Run No. 8 Load 50

Project ID	GE PPSD Martin Station	Meter Box Number	NCA-1	Noz. ID/Dia.	NA / (inch)	O2	
Plant	FP&L	Meter Calibration (Y)	1.0079	Filter Number	NA	CO2	
City	Indiantown, FL	Meter delta H @	1.7963	Static Pressure	NA (in. H ₂ O)	Measured by	
Location	Stack to Unit #	Pitot Tube No.	NA Cp NA	Barometric Pressure	29.67 (in Hg)		
Run Date	5-24-01	Probe Length		Pretest Leak Rate	.001 cfm @ 5 (in. Hg)		
Operator	DE	% Probe Liner Material	stainless	Post Test Leak Rate	.001 cfm @ 7 (in. Hg)		
Assumed Gas Moisture	10	Pitot Check: Pretest	NA	Post Test	NA		

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			Pro He
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
	0	1733	1194		3.0	203.78 + 950	81	61		
	6				3.0	209.60	83	54		
	12				3.0	215.20	83	53		
	18				3.0	220.80	83	55		
	24	1759				226.459				
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.	min/max

K-9

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals	
Final	763.4	624.8	616.1	786.5		DSCF
Initial	726.0	619.2	615.8	799.1	778.6	bws
net	37.4	5.6	3	7.9	51.2	moisture (0.0470)

Appendix L

Unit 8B
PARTICULATE DATA

Florida Power & Light
Indiantown, FL

PARTICULATE TEST SUMMARY

Unit 8B Stack

Run Number	1	2	3	Average
Test Date	5/23/01	5/23/01	5/23/01	
Run Time	1416-1731	1854-2209	2244-0155	
<u>Test Train Parameters:</u>				
Volume Gas Sampled, dscf ¹	123.788	137.918	142.177	
Percent Isokinetic, %	94.2	101.4	101.5	
<u>Flue Gas Parameters:</u>				
Temperature, Degrees F	1100	1100	1100	1100
Moisture, %	10.1	9.7	8.6	9.5
Volumetric Flow Rates calculated Standard, dscfm	702,224	712,239	717,384	710,616
<u>Particulate Results:</u>				
Milligrams collected	2.30	2.60	3.10	2.67
Concentration, mg/dscf ¹	0.0186	0.0189	0.0218	0.02
calc Emission Rate, lb/hr	1.73	1.78	2.07	1.86

¹ dry standard conditions, 68F, 29.92 in. Hg

L-0

**Florida Power & Light
Indiantown, FL**

Particulate Results

Unit 8B Stack

TEST DATA:

Run number	1	2	3
Date	5/23/01	5/23/01	5/23/01
Time period	1416-1731	1854-2209	2244-0155
Operator	DE/BG	DE/BG	DE/BG

SAMPLING DATA:

Sampling duration, min.	180	180	180
Nozzle diameter, in.	0.244	0.244	0.244
Barometric pressure, in. Hg	29.57	29.57	29.57
Avg. orifice press. diff., in H ₂ O	1.76	2.21	2.26
Avg. dry gas meter temp., F	89.67	85.42	87.75
Volume H ₂ O impingers (ml)	263.9	237.0	244.2
Weight change silica gel (g)	31.3	77.3	40.9
Std. vol. of H ₂ O vapor coll., cu.ft.	13.90	14.80	13.42
Dry gas meter calibration factor	1.0079	1.0079	1.0079
Sample vol. at meter cond., dcf	128.859	142.189	147.302
Sample vol. at std. cond., dscf (1)	123.788	137.812	142.177
Percent of isokinetic sampling	94.2	101.4	101.5

GAS STREAM COMPOSITION DATA:

CO ₂ , % by volume, dry basis	4.2	4.2	4.2
O ₂ , % by volume, dry basis	13.7	13.7	13.6
CO, % by volume dry basis	0.0	0.0	0.0
N ₂ , % by volume, dry basis	82.1	82.1	82.2
Molecular wt. of dry gas, lb/lb mole	29.22	29.22	29.22
H ₂ O vapor in gas stream, prop. by vol.	0.101	0.097	0.086
Mole fraction of dry gas	0.899	0.903	0.914
Molecular wt. of wet gas, lb/lb mole	28.09	28.13	28.25

GAS STREAM VELOCITY

Sq. rt. delta P	1.2675	1.3066	1.3327
Static pressure, in. H ₂ O	-0.45	-0.45	-0.45
Absolute pressure, in. Hg	29.54	29.54	29.54
Avg. temperature, F	1100	1100	1100
Pitot tube coefficient	0.84	0.84	0.84
Total number of traverse points	24	24	24
Avg. gas stream velocity, ft./sec.	124.8	128.6	130.9

CE EER

Isokinetic Field Data - Method 5 Run No. 1

Project ID 7623- Impinger Box Number NA1 Noz. ID/Dia. 1.244 (inch) O2 13.2
 Plant FP&L Meter Box Number NA1 Filter Number 1356 CO2 2.16
 City Indiantown, FL Meter Calibration (Y) 1.0079 Static Pressure -1.45 (in. H₂O) *Measured by Orsat*
 Location Unit # Stack - Gas/Oil Fir Meter delta H @ L7963 Barometric Pressure 29.57 (in. Hg)
 Run Date 5-23-01 Pitot Tube No. Cp 0.84 Pretest Leak Rate .001 cfm @ 5 (in. Hg)
 Operator DE BG Probe Length 9 ft. TC No. Post Test Leak Rate .002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material Quartz Pitot Check: Pretest Post Test

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)					
				Gas Velocity ΔP	Meter Orifice ΔH		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat		
A	0	1416	1100	1.8	1.9	741.260	92	56	256			
	7.5		↓	1.9	2.0	746.72	97	53	252			
	15		↓	1.8	1.9	752.42	95	58	254			
	22.5		↓	1.6	1.7	758.05	93	59	254			
	30		↓	1.4	1.5	763.42	92	63	256			
	37.5		↓	1.3	1.4	768.53	92	63	254			
	45	1501				773.110						
B	0	1505	1100	1.6	1.7	773.110	93	54	252			
	7.5			1.7	1.8	778.30	93	56	254			
	15			1.8	1.9	783.01	93	61	257			
	22.5			1.9	2.0	789.36	95	61	249			
	30			2	2.1	795.10	95	66	254			
	37.5			2.0	2.1	801.22	95	66	255			
	45	1550				806.711						
C	0	1555		1.5	1.6	806.711	88	67	228			
	7.5			1.7	1.8	811.92	88	64	254			
	15			1.4	1.5	817.02	84	65	258			
	22.5			1.3	1.4	822.00	83	60	261			
	30			1.1	1.2	826.97	85	62	262			
	37.5			1.2	1.3	831.60	83	62	261			
	45	1640				836.109						
Average Values										max	min/max	min

Project ID 7623-
Plant FP&L

Location Palm Beach, FL

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)				W (in)
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat	
1	0	1646	1100	2.0	2.1	836.111	86	62	260		
2	7.5		↓	2.0	2.1	842.22	88	66	259	4	
3	15			2.0	2.1	847.96	89	59	250	4	
4	22.5			1.8	1.9	853.72	86	62	250	4	
5	30			1.5	1.6	859.70	84	62	243	4	
6	37.5			1.5	1.6	865.32	83	62	240	4	
	45	1731					870.119				
* TC originally used was malfunctioning so stack temp w/ g/h.											
				1.283							
Average Values				1.283	1.258	128.859	870				

L-3

93⁹
1368

GE EER

Field Data - Method 4 Moisture Run No. _____ Load _____

Project ID GE PPSD Martin Station Noz. ID/Dia. NA / _____ (inch) O2 _____
 Plant FP&L Meter Box Number _____ Filter Number NA CO₂ _____
 City Indiantown, FL Meter Calibration (Y) _____ Static Pressure NA (in. H₂O) Measured
 Location Stack to Unit # Meter delta H @ _____ Barometric Pressure _____ (in Hg)
 Run Date 5-24-01 Pitot Tube No. NA Cp NA Pretest Leak Rate _____ cfm @ _____ (in. Hg)
 Operator DE Probe Length _____ TC No. _____ Post Test Leak Rate _____ cfm @ _____ (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material _____ Pitot Check: Pretest NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)				
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pi H	
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 65	max.	min. 100	

7-7

8B ~~8B~~
 MS
 5-23-01

Run 1

Impinger Weights	1st (water)			2nd (water)			3rd (empty)			1st (silica gel)			totals
	Final	Initial	net	Final	Initial	net	Final	Initial	net	Final	Initial	net	
	904.8	691.0	213.8	725.3	683.4	41.9	608.7	600.5	8.2	933.2	901.9	31.3	

DE

DSCF
 bws
 moisture
 (0.047C



Project ID 7623- Impinger Box Number _____ Noz. ID/Dia. 1.244 (inch) O₂ 13.1
 Plant FP&L Meter Box Number NCA-1 Filter Number RQ1171 CO₂ 4.2
 City Indiantown, FL Meter Calibration (Y) 1.0079 Static Pressure -.45 (in. H₂O) *Measured by Orsat / An*
 Location Unit # Stack - Gas/Oil Fir Meter delta H @ 1.7963 Barometric Pressure 29.57 (in. Hg)
 Run Date 5-23-01 Pitot Tube No. _____ Cp 0.84 Pretest Leak Rate 1002 cfm @ 5 (in. Hg)
 Operator DE BG Probe Length 9 ft. TC No. _____ Post Test Leak Rate 1002 cfm @ 7 (in. Hg)
 Assumed Gas Moisture 10 % Probe Liner Material Quartz Pitot Check: Pretest Post Test

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)				(in)
				Gas Velocity ΔP	Meter Orifice ΔH		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat	
D	0	1854	1100	1.6	2.83	870.260	81	59	233		3
	7.5			1.8	2.83	875.72	82	59	233		3
	15			2.0	2.6	881.37	84	63	250		
	22.5			2.2	2.8	887.70	85	65	243		4
	30			2.0	2.6	894.10	85	66	258		5
	37.5			2.0	2.6	900.30	86	61	255		5
	45				906.718						
		1939				(56,958)					
C	0	1945	1100	1.8	2.83	906.718	97	64	245		
	7.5			1.6	2.0	912.98	84	63	244		
	15			1.4	1.8	918.57	84	63	244		
	22.5			1.1	1.4	924.00	83	66	242		
	30			1.1	1.4	928.99	83	66	249		
	37.5			1.1	1.4	933.72	82	60	246		
	45	2030			(31,834)	938.552					
B	0		↑	1.9	2.5	938.552	81	60	251		
	7.5	2037	1100	2.1	2.7	945.17	83	61	248		
	15			2.0	2.6	951.60	84	66	252		
	22.5			1.8	2.3	958.13	86	61	251		
	30			1.3	1.6	964.61	86	60	251		
	37.5			1.3	1.6	969.71	86	62	249		
	45	2122			974.749						
						(36,197)					
Average Values											

D

C

B

GL EER

Isokinetic Field Data - Method 5

Run No. 2

Page 2

Project ID 7623- Location Palm Beach, FL
 Plant FP&L

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat
1	0	2124	100	1.4	1.8	974.479	86	58	250	
2	7.5			1.5	1.9	980.31	88	58	251	
3	15			2.0	2.6	985.83	88	60	249	
4	22.5			2.82	2.89	992.50	88	61	251	
5	30			2.1	2.7	999.40	89	67	250	
6	37.5			2.1	2.7	3.61	89	67	251	
	45	2209				12.449				
						25.521				
						+ 12.449				
						<u>37.97</u>				
						101.77%				
VAP				1.305	2.21	142.459	85			

1
2
3
4
5
6

7-7

314.3 gr

GE EER

Field Data - Method 4 Moisture Run No. _____ Load _____

Project ID	GE PPSD Martin Station	Noz. ID/Dia.	NA / (inch)	O2	_____
Plant	FP&L	Meter Box Number	_____	Filter Number	NA
City	Indiantown, FL	Meter Calibration (Y)	_____	Static Pressure	NA (in. H ₂ O)
Location	Stack to Unit #	Meter delta H @	_____	Barometric Pressure	_____ (in Hg)
Run Date	_____	Pitot Tube No.	NA Cp NA	Pretest Leak Rate	_____ cfm @ _____ (in. Hg)
Operator	_____	Probe Length	_____ TC No.	Post Test Leak Rate	_____ cfm @ _____ (in. Hg)
Assumed Gas Moisture	_____ %	Probe Liner Material	_____	Pitot Check: Pretest	NA Post Test NA

Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			Pro He
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 64	max.	min/max

L-7

8B Run 2

M5 5-23-0

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	906.3	791.3	616.8	945.0	DSCF
Initial	743.4	725.3	608.7	867.7	bws
net	162.9	66	8.1	77.3	moistur (0.047)

Project ID <u>7623-</u>		Location _____								
Plant <u>FP&L.</u>										
Port & Traverse Point No.	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)			
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Probe Heat
1	0	110	1100	1.6	2.0	122,402	87	66	251	
2	7.5			1.8	2.3	128,20	88	67	255	
3	15			1.8	2.3	134,32	88	61	250	
4	22.5			2.0	2.6	140,50	90	60	252	
5	30			2.0	2.6	147,30	91	61	253	
6	37.5			2.0	2.6	153,86		62	249	
	45					160,220				
Average Values									max.	min/max

D

6-7

GE EER

Field Data - Method 4 Moisture Run No. _____ Load _____

Project ID	GE PPSD Martin Station	Noz. ID/Dia.	NA / (inch)	O2
Plant	FP&L	Meter Box Number	Filter Number NA	CO ₂
City	Indiantown, FL	Meter Calibration (Y)	Static Pressure NA (in. H ₂ O)	Measured
Location	Stack to Unit #	Meter delta H @	Barometric Pressure (in Hg)	
Run Date		Pitot Tube No. NA Cp NA	Pretest Leak Rate cfm @ (in. Hg)	
Operator		Probe Length TC No.	Post Test Leak Rate cfm @ (in. Hg)	
Assumed Gas Moisture	% Probe Liner Material	Pitot Check: Pretest NA Post Test NA		

Port & Traverse Point No	Sampling Time (Min.)	Clock Time (24 hr)	Stack Temperature (°F)	Pressure Differentials, (in. H ₂ O)		Gas Sample Volume (cubic feet)	Temperatures, (°F)				
				Gas Velocity P	Meter Orifice H		Dry Gas Meter	Impinger Outlet	Filter Oven	Pt H	
Average Values			#DIV/0!		#DIV/0!	0.000	#DIV/0!	less than 68	max.	min/max	

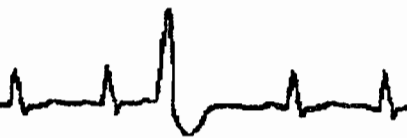
01-7

8B RUNS

M-5 5-23-01

Impinger Weights	1st (water)	2nd (water)	3rd (empty)	last (silica gel)	totals
Final	859.5	616.7	612.4	793.0	DSCF
Initial	668.1	574.1	602.2	752.1	bws
net	191.4	42.6	10.2	40.9	moistur (0.047C)

RESOLUTION ANALYTICS, INC.
Specialists in High Performance Liquid Chromatography



2733 LEE AVENUE

SANFORD, NC 27330

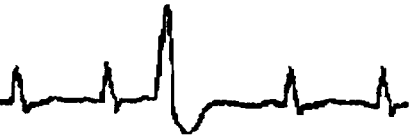
(919) 774-5557

ANALYTICAL REPORT

- FILTERABLE PARTICULATE
(EPA METHOD 5 (40 CFR. PART 60))

CLIENT: GE/EER

RFA#: 7623



87928 **REPORT SUMMARY** 87928

RFA#: 7623

<i>SAMPLE ID</i>	<i>Filterable Particulate</i>
ACETONE BLANK	0.1 mgs (150mls)
RUN 1	2.3 mgs
RUN 2	2.6 mgs
RUN 3	3.1 mgs

BEST AVAILABLE COPY

Energy and Environmental Research Corporation

18 Mason, Irvine, CA 92718
tel: (714) 859-8851
fax: (714) 859-3194

Laboratory Report Due by _____ to:
EER Contact: Mike White Address: 1001 Aviation Pkwy
tel: (919) 460-1060 Suite 100
fax: (919) 460-1944 Morrisville, NC 27560

Sample Chain of Custody Record

EER Project No: <u>7623-</u>		Sampling System Prepared by:				Analyses Required <i>Particulate 10/04</i>
Project Name: <u>FP+L Martin Station</u>		Test Operator(s):				
Site Name: <u>Unit B</u>		Samples Recovered by:				
Laboratory I.D. No.	EER Label No.	FIELD SAMPLE IDENTIFICATION AND SAMPLING INFORMATION				No. of Containers
		Test ID / Location	Physical Description	Date	Time	
	<u>209577</u>	<u>AB-100-M5-1F</u>	<u>Run 1-Filter</u>	<u>05/23/01</u>	<u>14:16/1731</u>	1
	<u>209578</u>	<u>AB-100-M5-1A</u>	<u>Run 1-Acetone</u>		↓	1
	<u>209579</u>	<u>AB-100-M5-2F</u>	<u>Run 2-Filter</u>		<u>1815/2209</u>	1
	<u>209580</u>	<u>AB-100-M5-2A</u>	<u>Run 2-Acetone</u>		↓	1
	<u>209581</u>	<u>AB-100-M5-3F</u>	<u>Run 3-Filter</u>		<u>2244/0155</u>	1
	<u>209582</u>	<u>AB-100-M5-3A</u>	<u>Run 3-Acetone</u>	↓	↓	1
Method of Shipment: <u>Fed-Ex</u>		Remarks (RUSH!, units: mg/L, ppm, etc.):		Relinquished by: (Sign & Print) <u>John Maxwell</u>		Date / Time: <u>06/05/01</u>
Shipment I.D.:	Date Shipped: <u>06/05/01</u>					
Samples Shipped to: <u>Resolution Analytics</u> <u>2733 Lee Avenue</u> <u>Sanford, NC 27330</u>						
Attention:		After analysis: <input type="checkbox"/> Archive samples (Hold for _____ months, then dispose.)				
		<input type="checkbox"/> Return samples to: EER Corporation 8001 Irvine Blvd., Irvine, CA 92705				

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Analytical Narrative

RFA # 7623

Page 1 of 1

Client/Plant Name: EERDate Rec'd in lab: 6/12/01Analyst: CLTDate of Analysis: 6/19/2001Analysis Method: EPA Method 5 (40 CFR, Part 60)Analyte(s): Filterable Particulate

Sample Matrix & Components:

Dry Filters, Front $\frac{1}{2}$ Acetone Rinses, Acetone Blank

Summary of Sample Prep:

The acetone rinses and pre-tared filters were transferred to pre-tared teflon "baggies" in a low humidity environment. The acetone rinses were evaporated overnight, then desiccated for 24 hours, after which time they were weighed daily every six hours until consecutive weights agreed within ± 0.5 mgs. The filters were oven dried at 105°C for 2 hours and weighed immediately afterwards. All weights were recorded to the nearest 0.1 mg and include filterable particulate catch only. The total catch reported for each run is a sum of the filter and rinse catches. The acetone blank catch has been subtracted out of sample rinse catches in proportion with their respective volumes.

Summary of Instrumentation:

Denver model A-250 analytical balance

Analytical Detection Limit(s): 0.5 mgs

Miscellaneous Comments Regarding Sample Analysis: (Note unusual catch weights, interferences, odd sample behavior, and steps taken to confirm unusual results. Also note any deviations from standard analytical procedures, together with justification and possible affect on results. Specify samples when applicable.)

No modifications to EPA Method 5 analytical procedure were made.

Confirmation of Data Review:

QA Officer Signature


(J. Bruce Nemet , Lab QA Officer)

Date

6/19/01

PARTICULATE SAMPLING LABORATORY RESULTS

Plant Name: FP&L	RFA #: 7823		
Method: MS	Filename: EER		
Date Received: 07/20/01	Page 2 of 2		
File Pathway: C:\JOBS\7823\EER.WB1			
Run Number	RUN 1	RUN 2	RUN 3

Filter Container #	Date	Init	134	Date	187	Date	1252
	06/18	CLT	3.7330	06/18	3.8104	06/18	3.8196
Baggie Tare Wt., g.			3.4018		3.4602		3.4671
Filter Tare Wt., g.		RQ 1356	0.3301	RQ 1171	0.3494	RQ 1174	0.3517
FILTER SAMPLE WT., g.			0.0011		0.0008		0.0008

Rinse Container #	Date	Init	2009	Date	776	Date	131
-------------------	------	------	------	------	-----	------	-----

	06/19	CLT	Ⓢ	3.4065	06/19	Ⓢ	3.2575	06/19	Ⓢ	3.6399
	06/18	CLT		3.4066	06/18	Ⓢ	3.2575	06/18	Ⓢ	3.6402
Tare Wt., g.		(50 ml)		3.4053	(90 ml)		3.2556	(110 ml)		3.6375
RINSE SAMPLE WT., g.				0.0012			0.0019			0.0024

Filter Catch, mg.	1.1	0.8	0.8
Rinse Catch, mg.	1.2	1.9	2.4
Rinse Blank Residue, mg.	0.0	0.1	0.1
Net Rinse Catch, mg.	1.2	1.8	2.3
FILTERABLE PARTICULATE, mg.	2.3	2.6	3.1

Blank Beaker #	464
Final wt., mg.	3.3077
Tare wt., mg.	3.3076
Residue, mg.	0.1
Volume, ml.	150
Density, mg/ml	785.0
Conc., mg/mg	8.5E-07 ←
Upper Limit, mg/mg	1.0E-05

Legend: Ⓢ = Final Weight
 F = Filter
 R = Rinse

Miscellaneous Notes & Comments:

Printing Date:

19-Jun-2001

Printing Time:

09:55 AM

REAGENT BLANK LABORATORY RESULTS (Version 04.28.92)

Plant Name: FP&L	REA #	7623
Method: MS	Filename:	EBI
Date Received: 6/18/2001	Page	2 of 2
	File Pathway:	C:\JOBS\7623\EBI
Run Number	ACETONE BLANK	

Sample ID/Container # 464
Date | Init

	05/22	CLT	@	3.3077
	05/16	CLT		3.3079
Tare Wt., g.	(150	ml)	3.3076
SAMPLE WT., g.				0.0001

Printing Date:

19-Jun-2001

Printing Time:

09:55 AM

L-16

Particulate Worksheet

Client EER

Rel. Humidity 45%

Analyst CLT

Date 6-15-01

Filter

Acetone Rinse

Nozzle Cyclone

MeCl2 Rins

RUN#	Cont. #	Filter #	Filter Tare	Cont. #	Vol. (mls)	Cont. #	Vol. (mls)	Cont. #	Vol.
AB-100-M5-1	134	RQ-1356	.3301	2009	50				
AB-100-M5-2	187	RQ-1171	.3494	776	90				
AB-100-M5-3	1252	RQ-1174	.3517	131	110				

L1-7

Meter Box Post Test Calibration Check

Florida Power & Light
Indiantown, FL

Unit 8B Stack

Meter Box : NCA-1

Calibrated by: DE/BG
5-Pt Cal Date: 11/2/99

Delta H @ 1.7963
Gamma, initial 1.0079

Calculate Yqa for each test run using the following equation:

$$Y_{qa} = \frac{\theta}{V_m} \sqrt{\frac{0.0319 T_m}{\Delta H @ (P_b + \Delta \frac{H_{avg}}{13.6})} \frac{29}{M_d}} (\sqrt{\Delta H})_{avg}$$

where:

Yqa dry gas meter calibration check value, dimensionless.
q total run time, min.
Vm total sample volume measured by dry gas meter, dcf.
Tm absolute average dry gas meter temp., °R.
Pb barometric pressure, in. Hg.
0.0319 = (29.92/528)(0.75)² (in. Hg/°R) cfm².
ΔHavg average orifice meter differential, in. H2O.
ΔH@ orifice meter calibration coefficient, in. H2O.
Md dry molecular weight of stack gas, lb/lb-mole.
29 dry molecular weight of air, lb/lb-mole.
13.6 specific gravity of mercury.

After each test run series, do the following:

Average the three or more Yqa's obtained from the test run series and compare this average with the dry gas meter calibration factor, Y. The average Yqa must be within 5 percent of Y.

If the average Yqa does not meet the +5 percent criterion, recalibrate the meter over the full range of orifice settings, as detailed in Section 5.3.1 of Method 5. Then follow the procedure in Section 5.3.3 of Method 5.

	Test 1	Test 2	Test 3
time	180	180	180
Vm - total	128.859	142.189	147.302
Tm avg	89.7	85.0	87.8
Tm -R	550	545	548
Barometric	29.57	29.57	29.57
ΔHavg	1.758	2.213	2.263
ΔH@	1.7963	1.7963	1.7963
Md stack gas	29.22	29.22	29.22
Md Air	29.00	29.00	29.00
Meter Box Gamma	1.0079	1.0079	1.0079
QA Gamma	1.0546	1.0581	1.0443
Difference:	4.6%	5.0%	3.6%
within 5%?	PASS	PASS	PASS

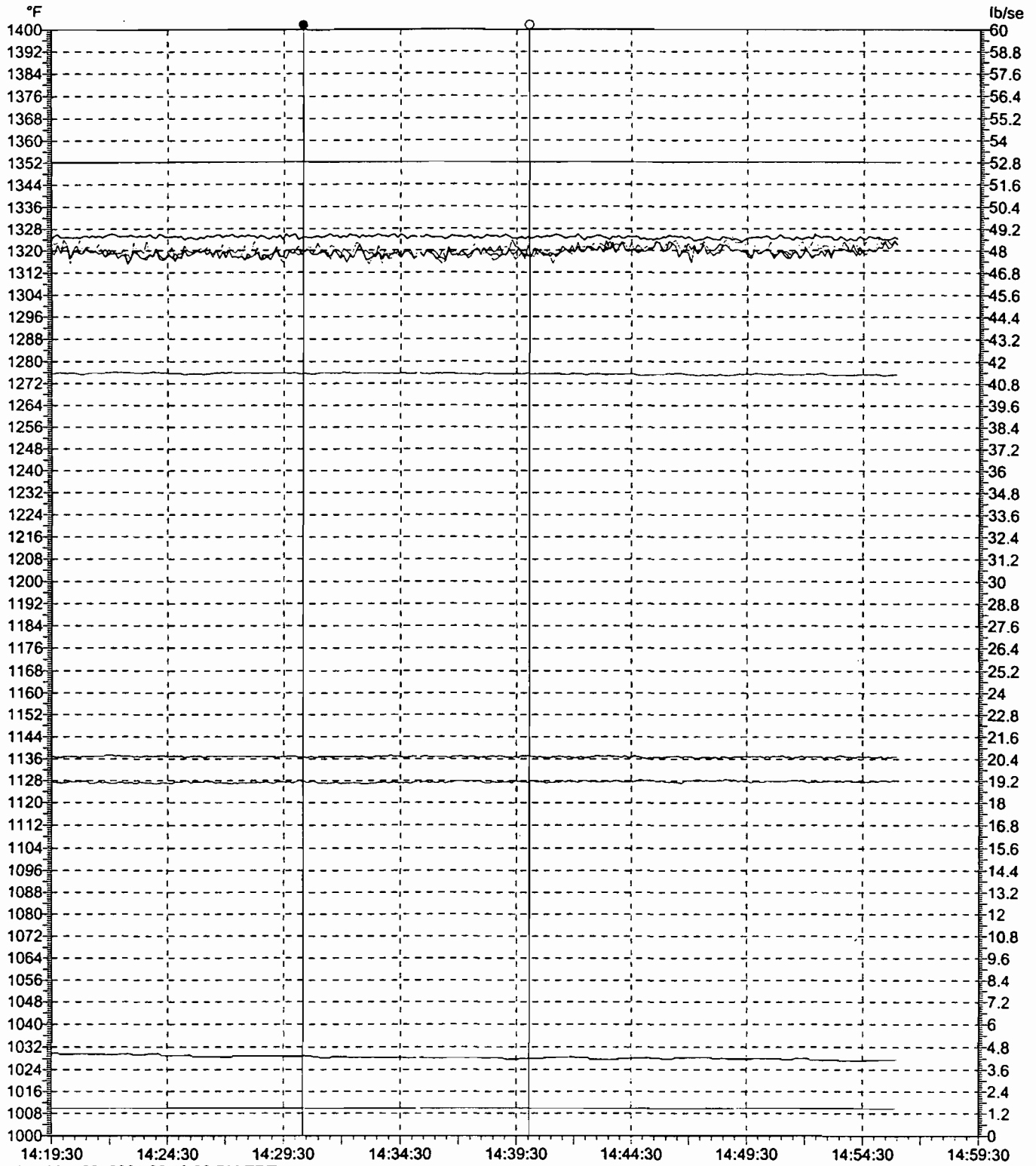
Appendix M

Unit 8B

PROCESS OPERATING DATA

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performance.tm - Event 0 of 1 - Printed 05/23/01 02:57:16 PM



Wednesday, May 23, 2001 02:19:30 PM EDT

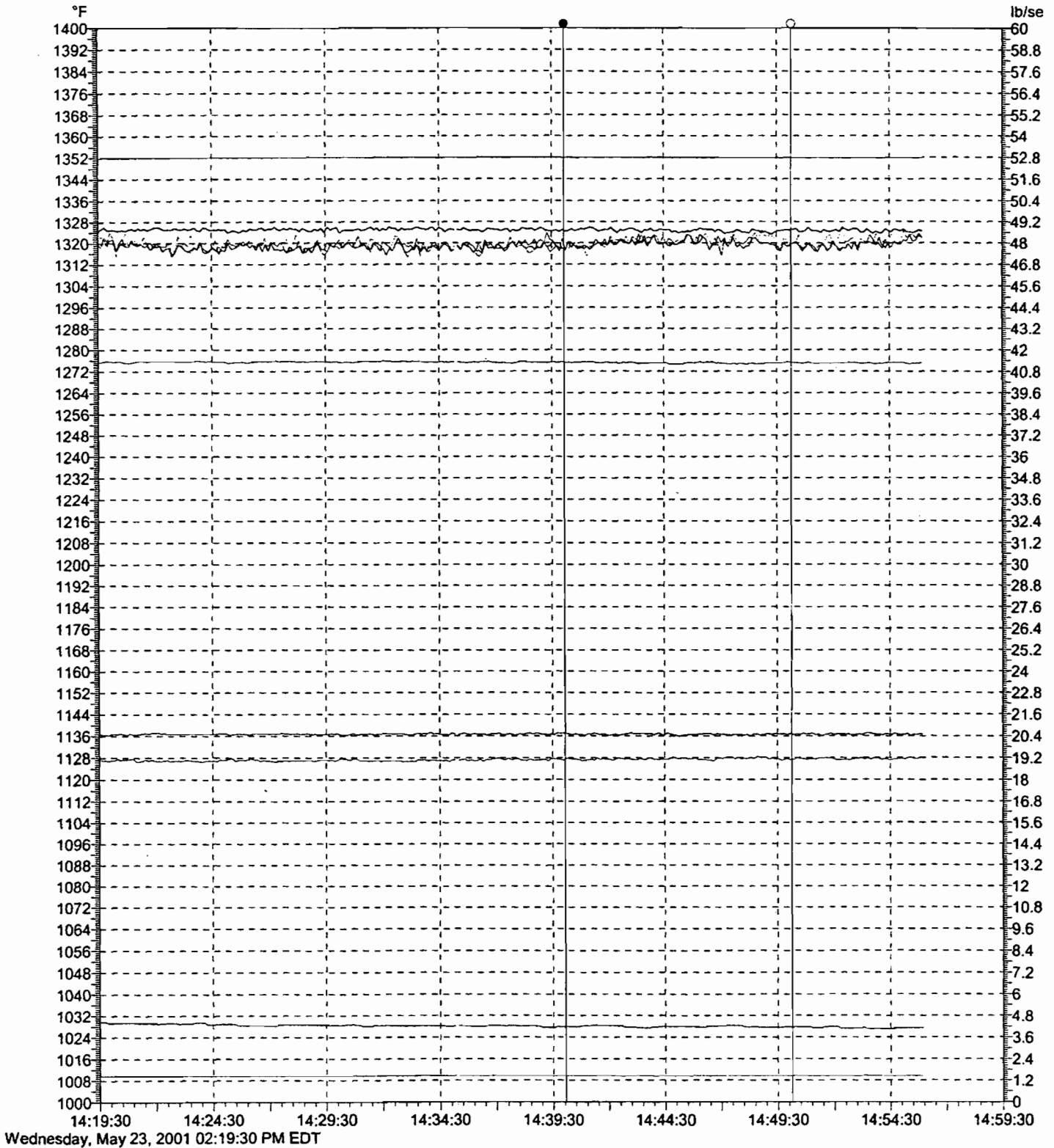
Left Cursor 05/23/01 02:30:19 PM.729 - Right Cursor 05/23/01 02:40:02 PM.432 - Difference 582.703 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B\TTXM	1127.7	1127.62	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.4934	20.5689	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	79.7146	79.9086	°F	Compressor Inlet Thermocouple 1A	0	10
		G8B\ctif1b	79.8644	79.3555	°F	Compressor Inlet Thermocouple 1B	0	10
		G8B\CTIM	79.6691	79.422	°F	Compressor Inlet Temperature	0	10
		G8B\CMHUM	0.035906	0.0349239	#H/#A	Specific Humidity	0	0
		G8B\DWATT	162.312	162.357	MW	Generator Watts Max Selected	0	20
		G8B\ICPD	206.563	206.683	psia	Compressor Discharge Press Max Select	0	30
		G8B\icsgv	88.0307	88.0149	DGA	IGV angle in deg	0	10
		G8B\WQ	2.46961	2.46891	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.10268e+038	2.10208e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10

*100% Load
Run 1*

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performance.trn - Event 0 of 1 - Printed 05/23/01 02:57:34 PM



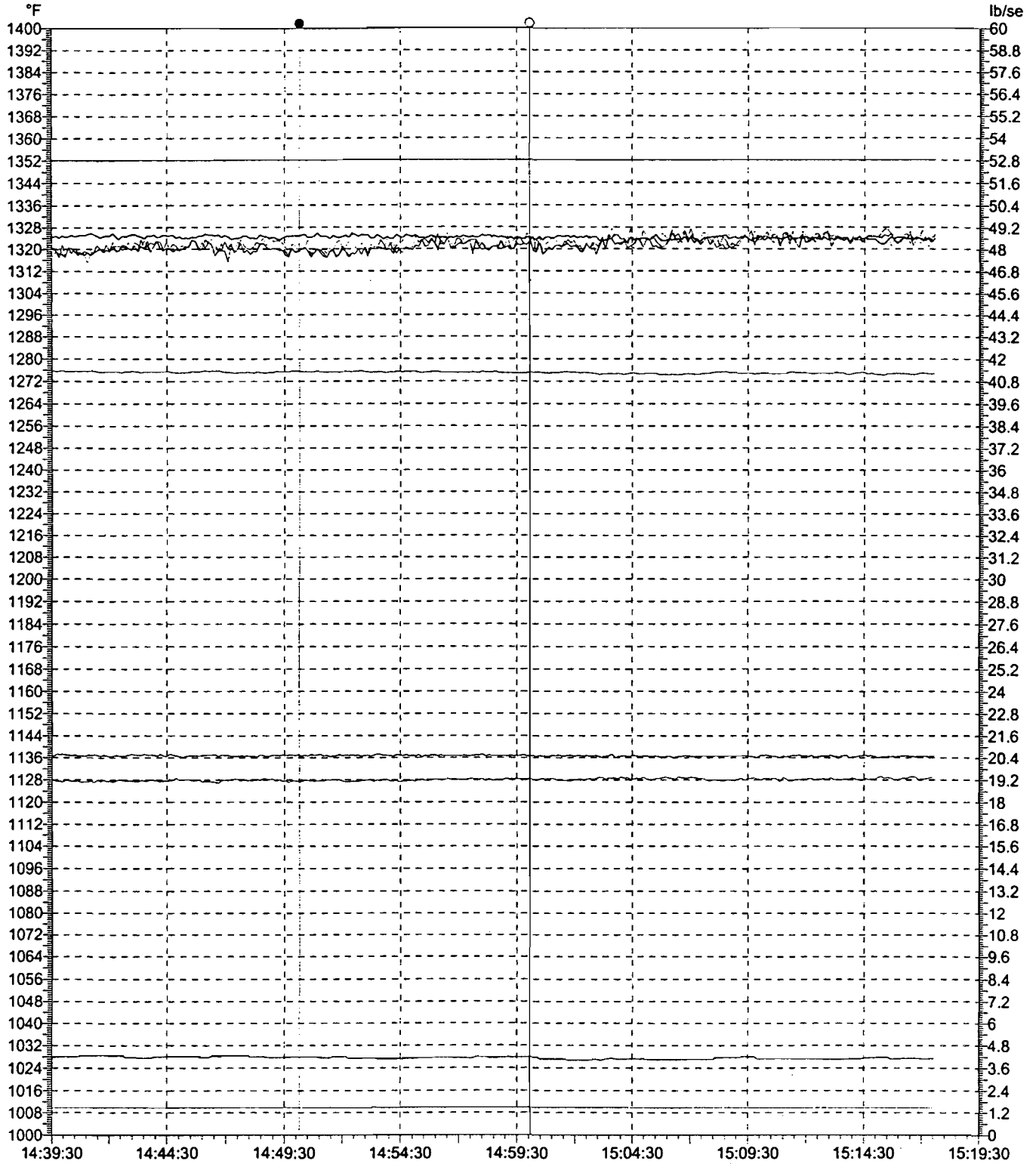
Wednesday, May 23, 2001 02:19:30 PM EDT

Left Cursor 05/23/01 02:40:02 PM.432 - Right Cursor 05/23/01 02:50:07 PM.837 - Difference 605.405 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	1	G8B\TTXM	1127.62	1127.41	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	2	G8B\FQG	20.5689	20.5313	lb/se	Gas Fuel Flow	0	60
	3	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	4	G8B\ctif1a	79.9086	79.837	°F	Compressor Inlet Thermocouple 1A	0	100
	5	G8B\ctif1b	79.3555	79.806	°F	Compressor Inlet Thermocouple 1B	0	100
	6	G8B\CTIM	79.422	79.8059	°F	Compressor Inlet Temperature	0	100
	7	G8B\CMHUM	0.0349239	0.0349397	#H/#A	Specific Humidity	0	0
	8	G8B\DWATT	162.357	162.396	MW	Generator Watts Max Selected	0	200
	9	G8B\CPD	206.683	206.651	psia	Compressor Discharge Press Max Select	0	300
	10	G8B\csgv	88.0149	88.0238	DGA	IGV angle in deg	0	100
	11	G8B\WQ	2.46891	2.4686	lb/se	Water Injection Flow from Feedback	0	100
	12	G8B\WXJ	2.10208e+038	2.10182e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	13	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0

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performance.tm - Event 0 of 1 - Printed 05/23/01 03:19:05 PM



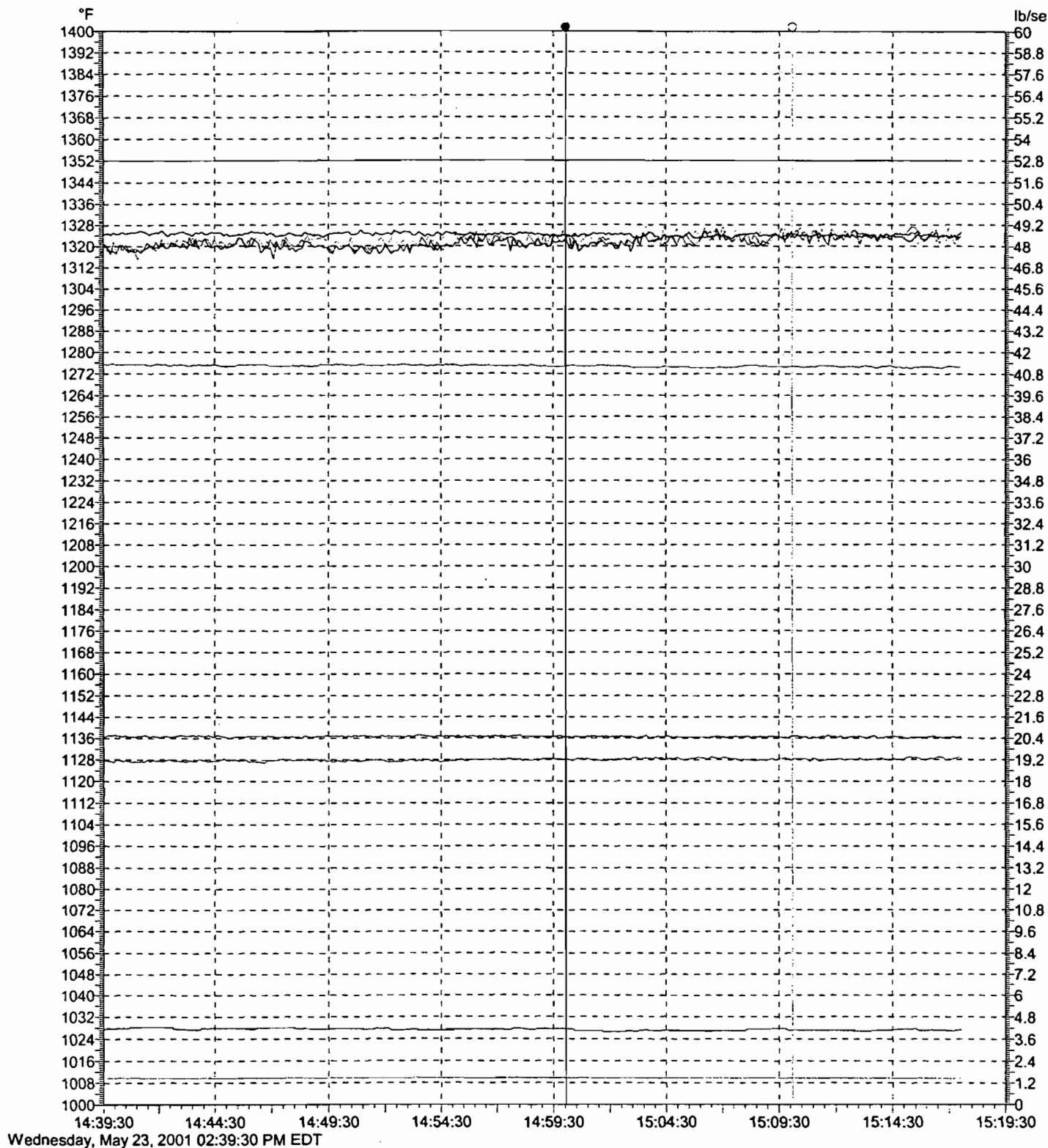
Wednesday, May 23, 2001 02:39:30 PM EDT

Left Cursor 05/23/01 02:50:07 PM.837 - Right Cursor 05/23/01 03:00:02 PM.432 - Difference 594.595 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B\TTXM	1127.41	1128.33	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.5284	20.4779	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	79.8456	80.6307	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	79.8164	81.0035	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	79.8162	80.6307	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.0349398	0.0347614	#H/#A	Specific Humidity	0	0
		G8B\DWATT	162.403	162.109	MW	Generator Watts Max Selected	0	200
		G8B\ICPD	206.643	206.213	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	88.0232	88.0238	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46861	2.46833	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.10183e+038	2.10159e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10

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performance.trn - Event 0 of 1 - Printed 05/23/01 03:19:27 PM



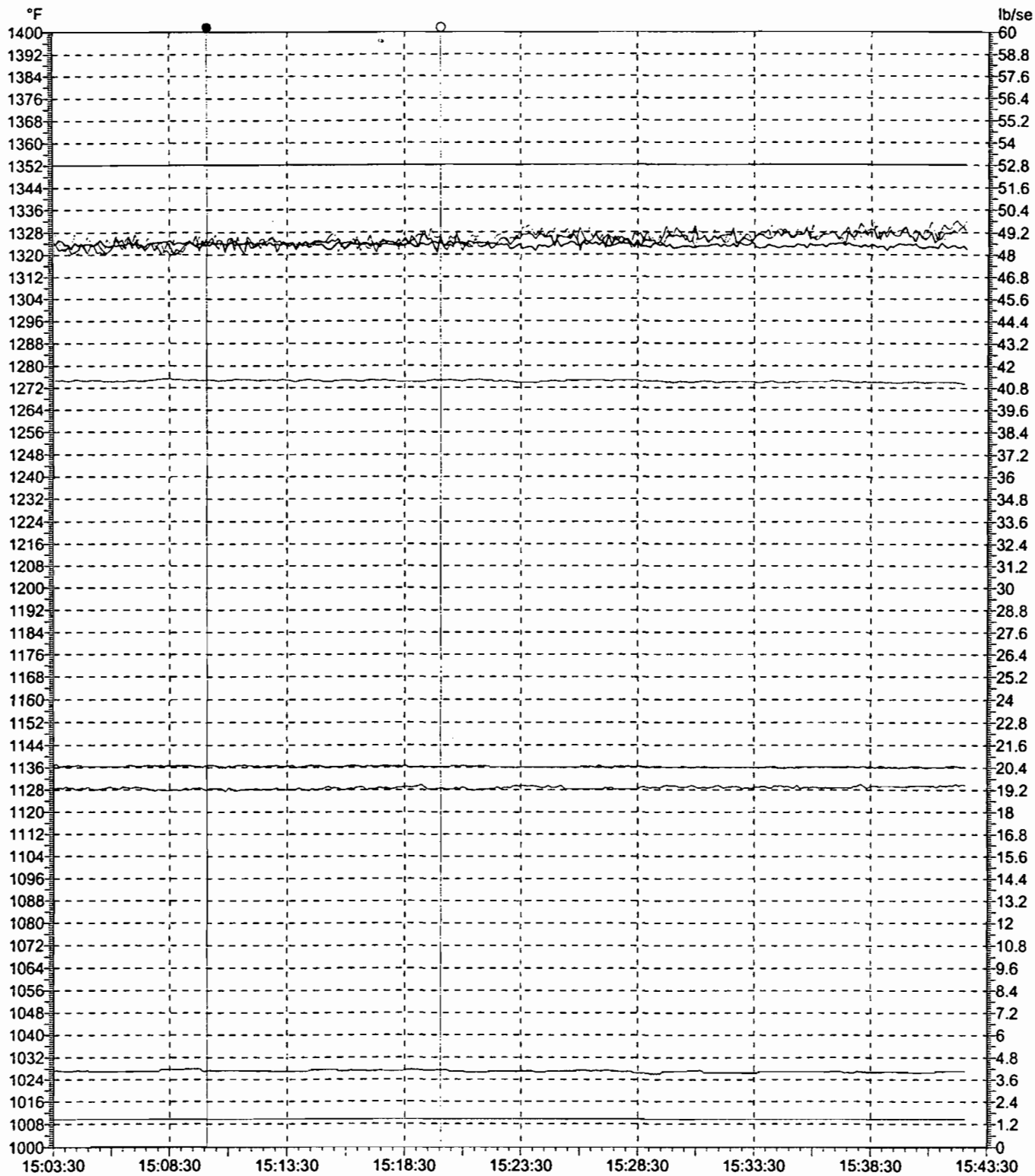
Wednesday, May 23, 2001 02:39:30 PM EDT

Left Cursor 05/23/01 03:00:02 PM.432 - Right Cursor 05/23/01 03:10:05 PM.135 - Difference 602.703 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	—	G8B\TTXM	1128.33	1128.16	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	—	G8B\FQG	20.4779	20.5253	lb/se	Gas Fuel Flow	0	6
	—	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	—	G8B\ctif1a	80.6307	80.9423	°F	Compressor Inlet Thermocouple 1A	0	100
	—	G8B\ctif1b	81.0035	81.3047	°F	Compressor Inlet Thermocouple 1B	0	100
	—	G8B\CTIM	80.6307	80.9227	°F	Compressor Inlet Temperature	0	100
	—	G8B\CMHUM	0.0347614	0.0341317	#H/#A	Specific Humidity	0	0
	—	G8B\DWATT	162.109	162.123	MW	Generator Watts Max Selected	0	200
	—	G8B\CPD	206.213	206.139	psia	Compressor Discharge Press Max Select	0	300
	—	G8B\csgv	88.0238	88.0132	DGA	IGV angle in deg	0	100
	—	G8B\WQ	2.46833	2.46739	lb/se	Water Injection Flow from Feedback	0	100
	—	G8B\WJ	2.10159e+038	2.10079e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	—	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0

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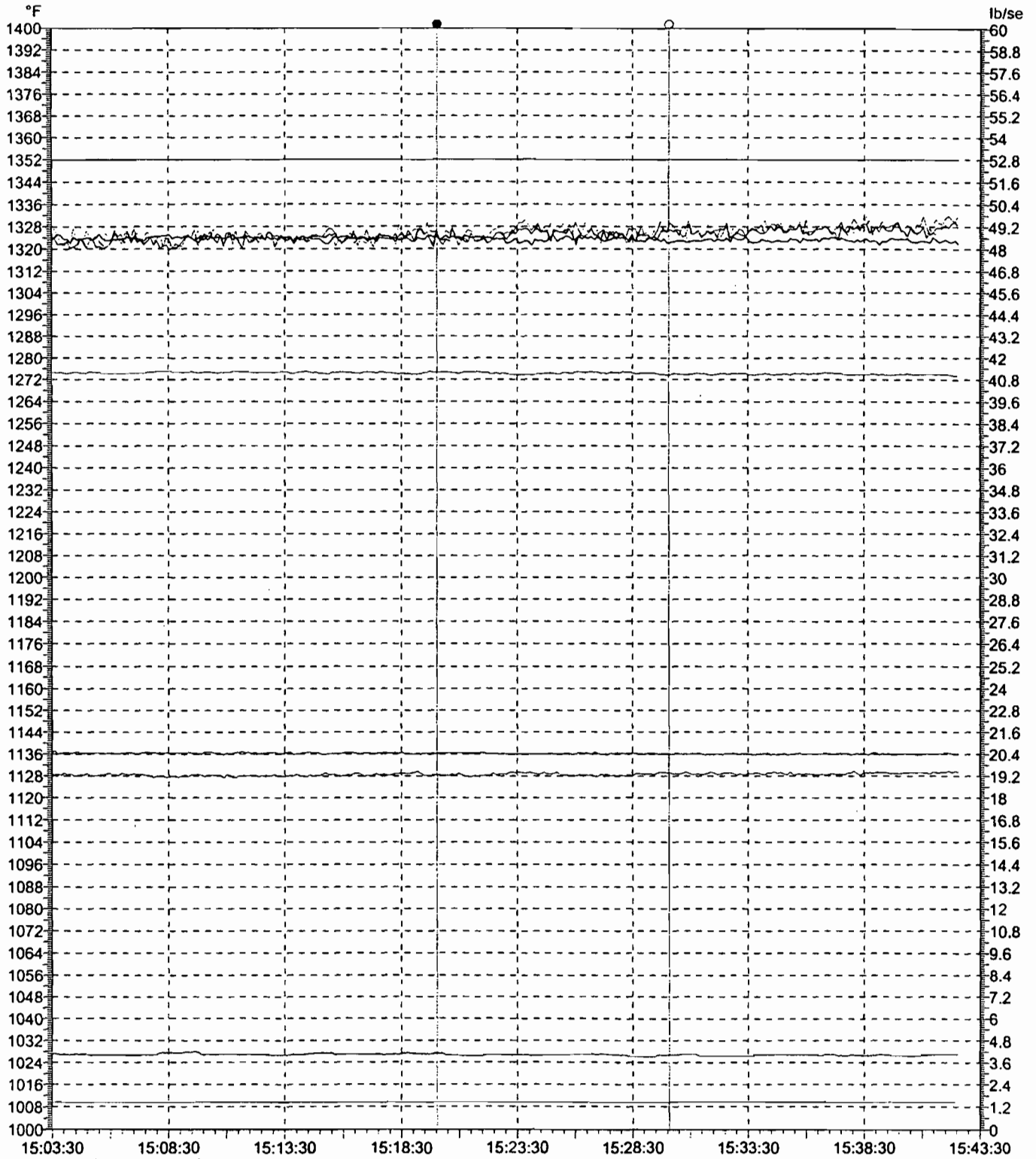
performance.tm - Event 0 of 1 - Printed 05/23/01 03:44:05 PM



Wednesday, May 23, 2001 03:03:30 PM EDT

Left Cursor 05/23/01 03:10:05 PM.135 - Right Cursor 05/23/01 03:20:01 PM.891 - Difference 596.757 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low Hi
<	—	G8B\TTXM	1128.17	1128.62	°F	Exhaust Temp Median Corrected By Average	1000 1400
>	—	G8B\FQG	20.5253	20.4374	lb/se	Gas Fuel Flow	0 1
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0 1
	---	G8B\ctif1a	80.9481	81.5887	°F	Compressor Inlet Thermocouple 1A	0 1
	---	G8B\ctif1b	81.3008	81.5411	°F	Compressor Inlet Thermocouple 1B	0 1
	---	G8B\CTIM	80.9275	81.5411	°F	Compressor Inlet Temperature	0 1
	---	G8B\CMHUM	0.0341347	0.03445	#H/#A	Specific Humidity	0 0
	---	G8B\DWATT	162.11	162.154	MW	Generator Watts Max Selected	0 2
	---	G8B\CPD	206.14	206.028	psia	Compressor Discharge Press Max Select	0 3
	---	G8B\csgv	88.0132	88.0297	DGA	IGV angle in deg	0 1
	---	G8B\WQ	2.46739	2.46583	lb/se	Water Injection Flow from Feedback	0 1
	---	G8B\WXJ	2.10079e+038	2.09946e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0



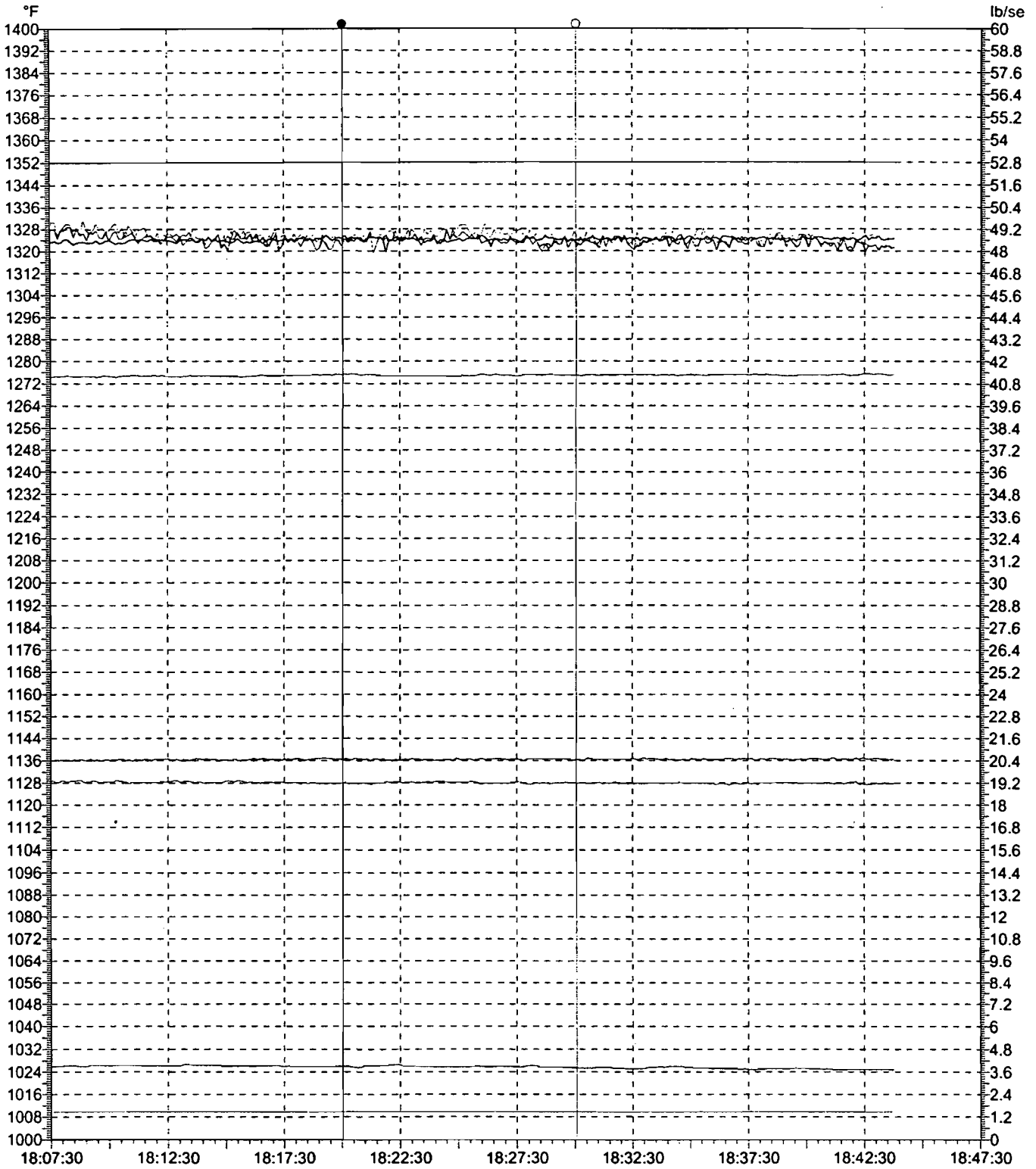
Wednesday, May 23, 2001 03:03:30 PM EDT

Left Cursor 05/23/01 03:20:01 PM.891 - Right Cursor 05/23/01 03:30:04 PM.594 - Difference 602.703 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<		G8B\TTXM	1128.62	1129.51	°F	Exhaust Temp Median Corrected By Average	1000	140
>		G8B\FQG	20.4374	20.4371	lb/se	Gas Fuel Flow	0	6
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	81.5887	82.0292	°F	Compressor Inlet Thermocouple 1A	0	10
		G8B\ctif1b	81.5411	81.6715	°F	Compressor Inlet Thermocouple 1B	0	
		G8B\CTIM	81.5411	81.6715	°F	Compressor Inlet Temperature	0	
		G8B\CMHUM	0.03445	0.0338654	#H/#A	Specific Humidity	0	
		G8B\DWATT	162.154	161.146	MW	Generator Watts Max Selected	0	20
		G8B\CPD	206.028	205.364	psia	Compressor Discharge Press Max Select	0	30
		G8B\csgv	88.0297	88.0297	DGA	IGV angle in deg	0	10
		G8B\WQ	2.46583	2.46559	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.09946e+038	2.09925e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	

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performance.tmn - Event 0 of 1 - Printed 05/23/01 06:45:09 PM

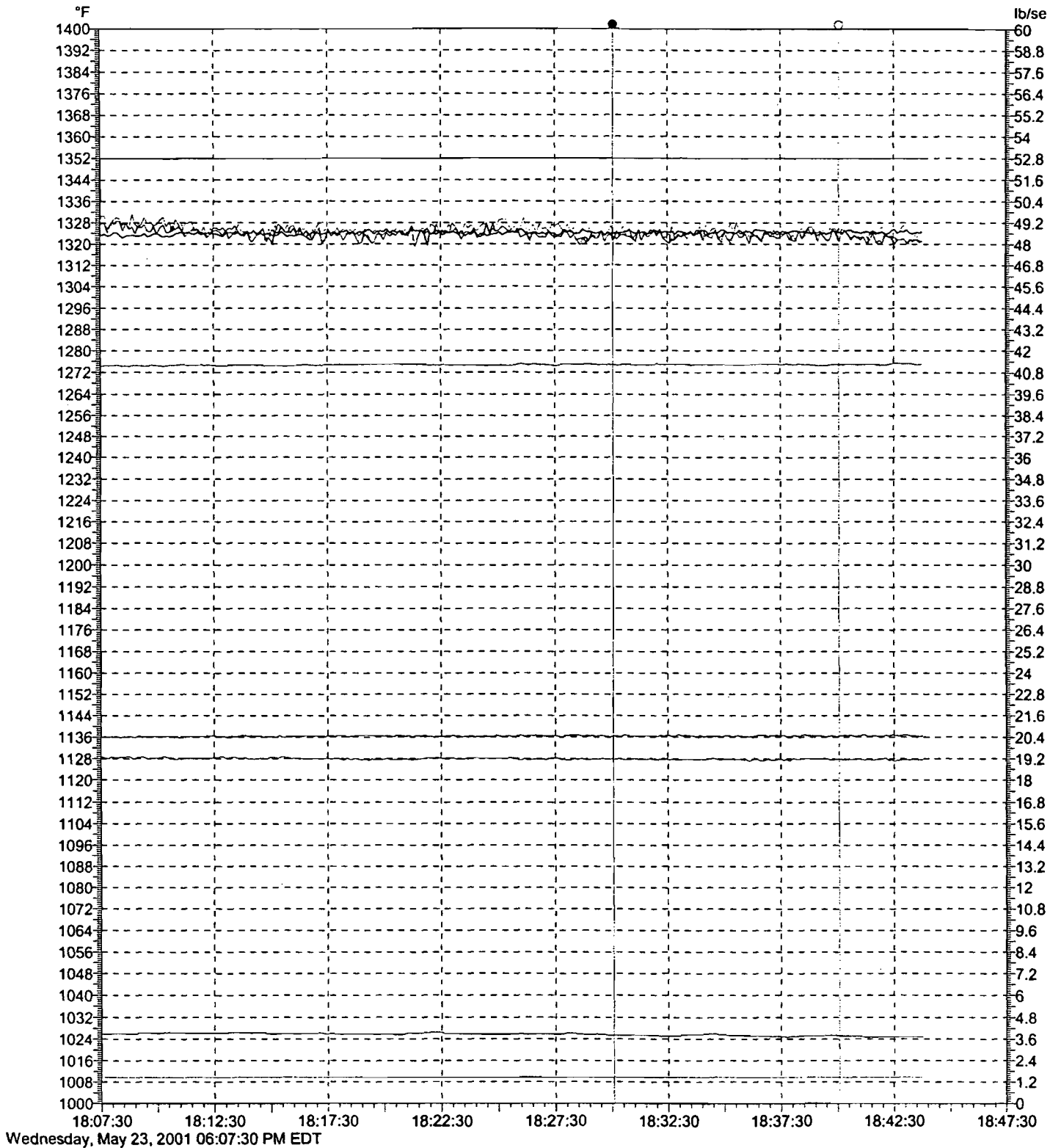


Wednesday, May 23, 2001 06:07:30 PM EDT

Left Cursor 05/23/01 06:20:01 PM.891 - Right Cursor 05/23/01 06:30:04 PM.054 - Difference 602.162 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	—	G8B\TTXM	1127.96	1127.95	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	—	G8B\FQG	20.4763	20.4682	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	—	G8B\ctif1a	80.5675	80.5722	°F	Compressor Inlet Thermocouple 1A	0	110
	—	G8B\ctif1b	80.9569	81.3924	°F	Compressor Inlet Thermocouple 1B	0	110
	—	G8B\CTIM	80.5675	80.7444	°F	Compressor Inlet Temperature	0	110
	—	G8B\CMHUM	0.0325655	0.0318419	#H/#A	Specific Humidity	0	0.10
	—	G8B\DWATT	162.398	161.99	MW	Generator Watts Max Selected	0	210
	—	G8B\CPD	206.271	206.152	psia	Compressor Discharge Press Max Select	0	300
	—	G8B\csgv	87.9995	88.0129	DGA	IGV angle in deg	0	110
	—	G8B\WQ	2.46258	2.46173	lb/se	Water Injection Flow from Feedback	0	110
	—	G8B\WXJ	2.09669e+038	2.09597e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	110
	—	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	110

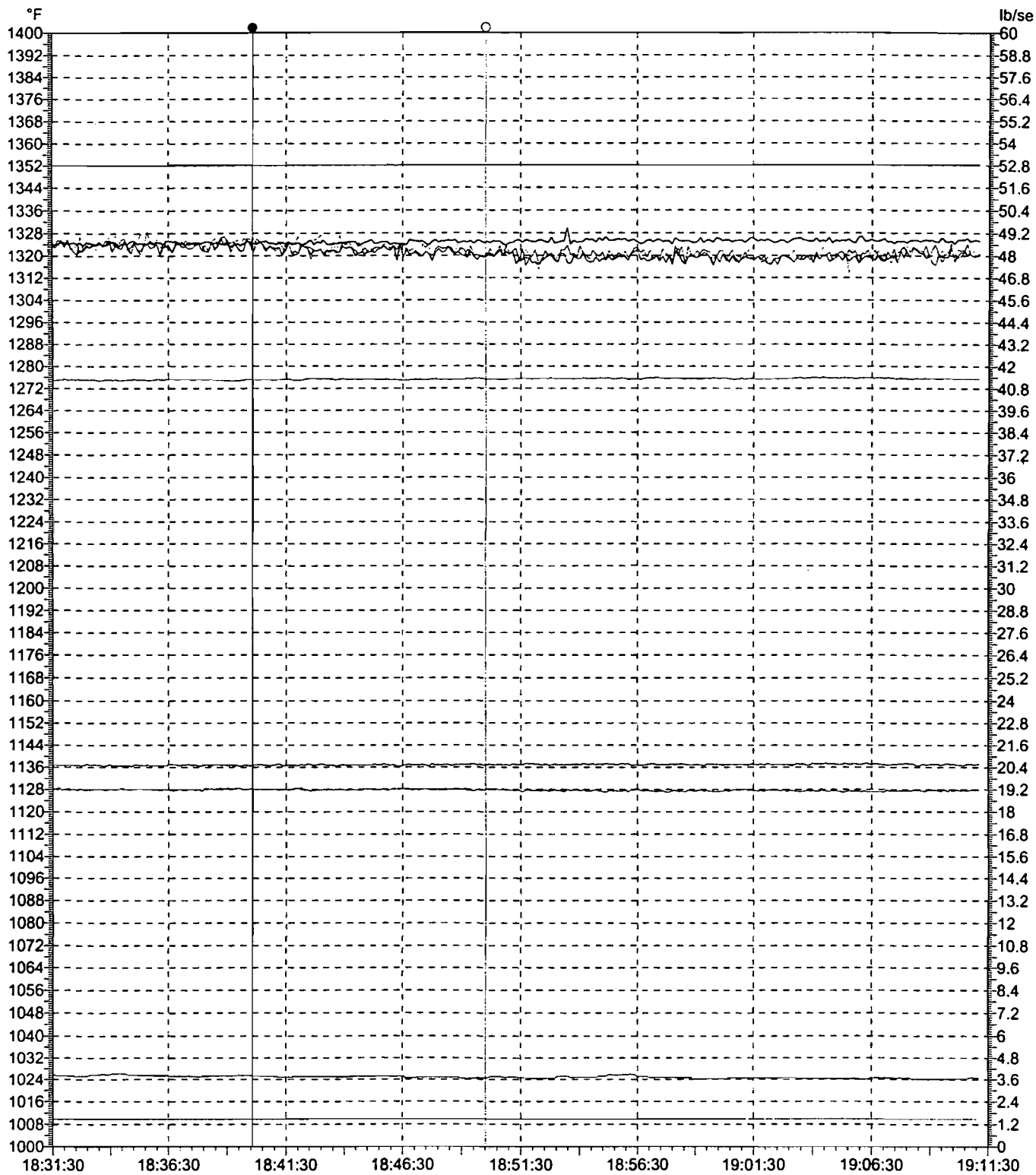
100% Load
Run 2



Wednesday, May 23, 2001 06:07:30 PM EDT

Left Cursor 05/23/01 06:30:04 PM.054 - Right Cursor 05/23/01 06:40:04 PM.054 - Difference 600 seconds

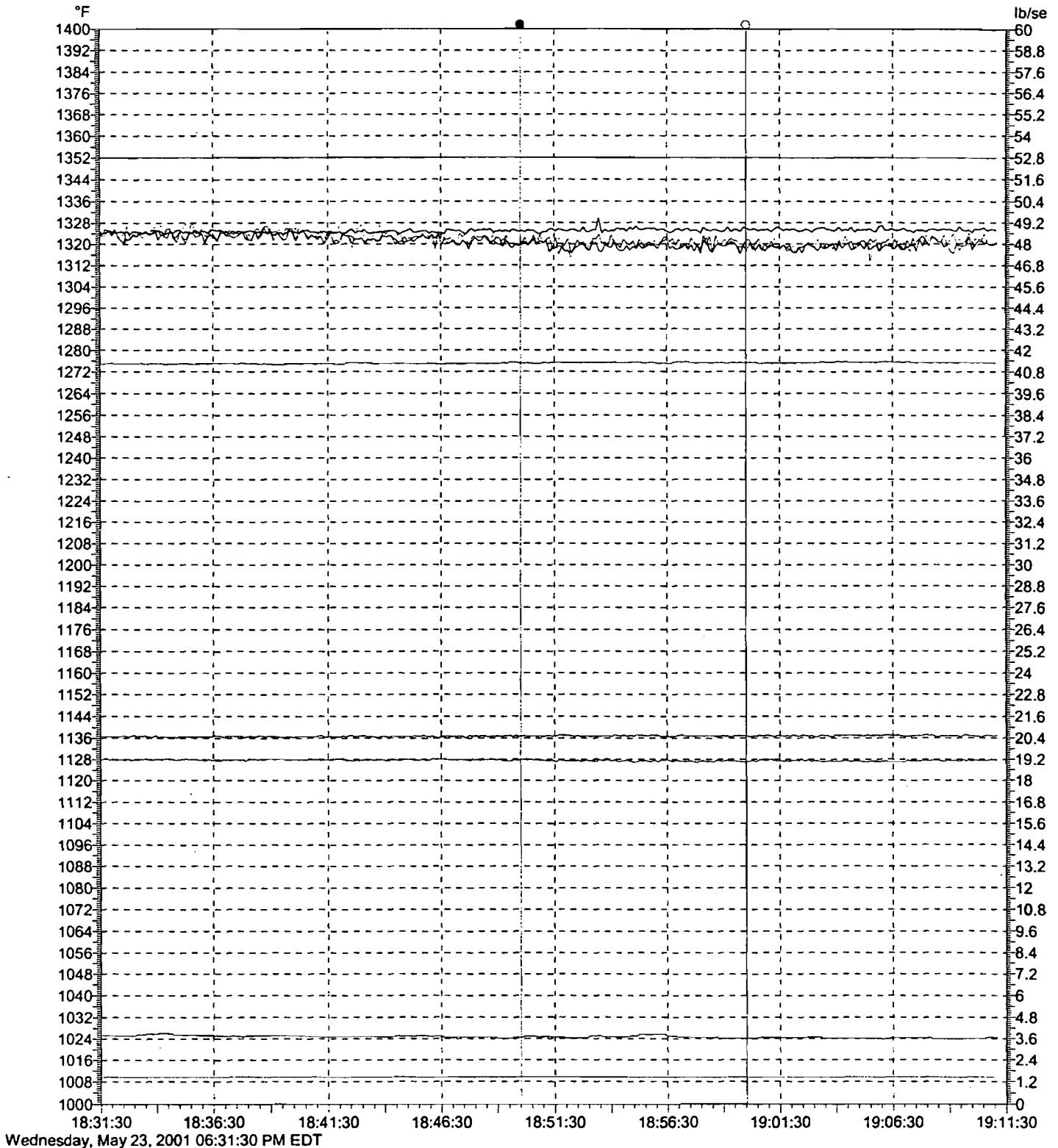
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<		G8B\TTXM	1127.95	1128.1	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.4682	20.4907	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	80.5722	80.4604	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	81.3924	81.4529	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	80.7444	80.3918	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.0318419	0.0316593	#H/#A	Specific Humidity	0	0
		G8B\DWATT	161.99	162.251	MW	Generator Watts Max Selected	0	200
		G8B\CPD	206.152	206.29	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	88.0129	88.0144	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46173	2.46293	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.09597e+038	2.097e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
		G8B\WXC	G	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0



Wednesday, May 23, 2001 06:31:30 PM EDT

Left Cursor 05/23/01 06:40:04 PM.054 - Right Cursor 05/23/01 06:50:00 PM.810 - Difference 596.757 seconds

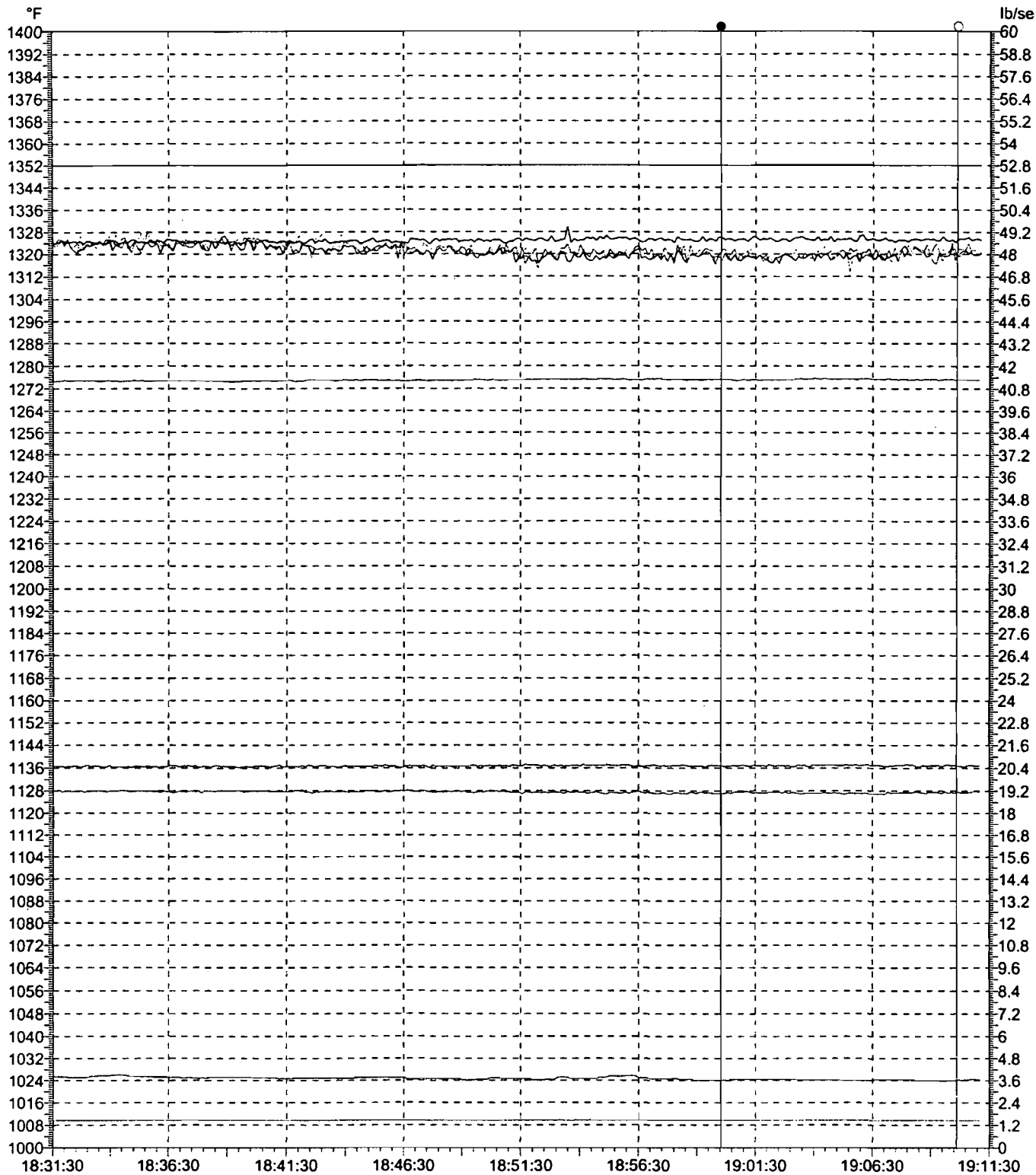
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	—	G8B\TTXM	1128.09	1127.85	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	—	G8B\FQG	20.4876	20.5126	lb/se	Gas Fuel Flow	0	60
	—	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	—	G8B\ctif1a	80.5317	79.9048	°F	Compressor Inlet Thermocouple 1A	0	100
	—	G8B\ctif1b	81.4192	80.0314	°F	Compressor Inlet Thermocouple 1B	0	100
	—	G8B\CTIM	80.4347	79.8592	°F	Compressor Inlet Temperature	0	100
	—	G8B\CMHUM	0.031674	0.0306303	#H/#A	Specific Humidity	0	0
	—	G8B\DWATT	162.263	162.428	MW	Generator Watts Max Selected	0	200
	—	G8B\CPD	206.29	206.416	psia	Compressor Discharge Press Max Select	0	300
	—	G8B\csgv	88.0144	88.0197	DGA	IGV angle in deg	0	100
	—	G8B\WQ	2.46299	2.46217	lb/se	Water Injection Flow from Feedback	0	100
	—	G8B\WXJ	2.09704e+038	2.09635e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	—	G8B\WXK	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0



Wednesday, May 23, 2001 06:31:30 PM EDT

Left Cursor 05/23/01 06:50:00 PM.810 - Right Cursor 05/23/01 07:00:00 PM.810 - Difference 600 seconds

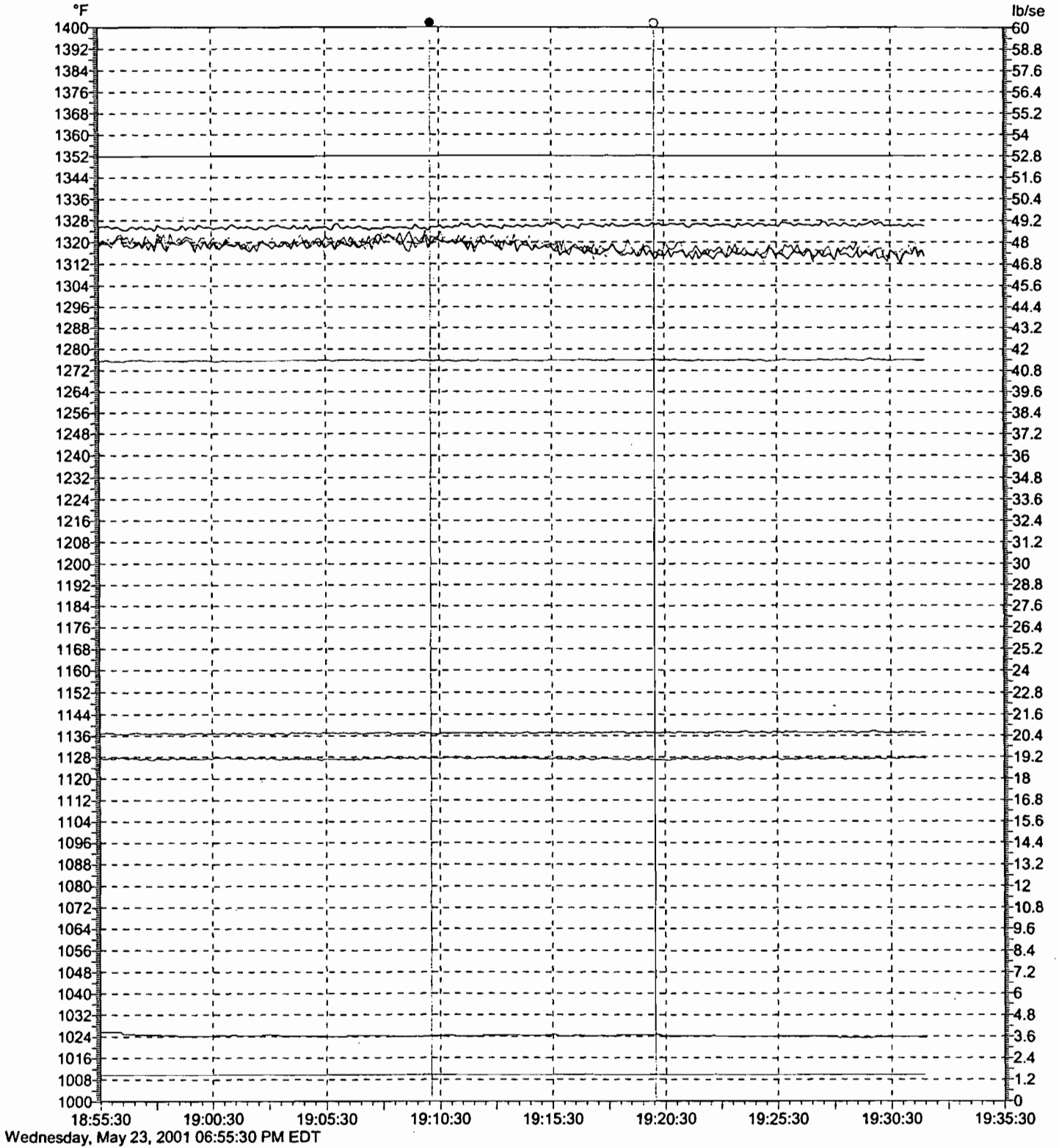
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	1	G8B\TTXM	1127.85	1127.22	°F	Exhaust Temp Median Corrected By Average	1000	140
>	2	G8B\FQG	20.5126	20.5454	lb/se	Gas Fuel Flow	0	6
	3	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	4	G8B\ctif1a	79.9048	80.2727	°F	Compressor Inlet Thermocouple 1A	0	10
	5	G8B\ctif1b	80.0314	79.4473	°F	Compressor Inlet Thermocouple 1B	0	10
	6	G8B\CTIM	79.8592	79.4658	°F	Compressor Inlet Temperature	0	10
	7	G8B\CMHUM	0.0306303	0.0302891	#H/#A	Specific Humidity	0	10
	8	G8B\DWATT	162.428	163.008	MW	Generator Watts Max Selected	0	20
	9	G8B\CPD	206.416	206.625	psia	Compressor Discharge Press Max Select	0	30
	10	G8B\csgv	88.0197	88.0252	DGA	IGV angle in deg	0	10
	11	G8B\WQ	2.46217	2.46488	lb/se	Water Injection Flow from Feedback	0	10
	12	G8B\WXJ	2.09635e+038	2.09866e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
	13	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10



Wednesday, May 23, 2001 06:31:30 PM EDT

Left Cursor 05/23/01 07:00:00 PM.810 - Right Cursor 05/23/01 07:10:06 PM.216 - Difference 605.405 seconds

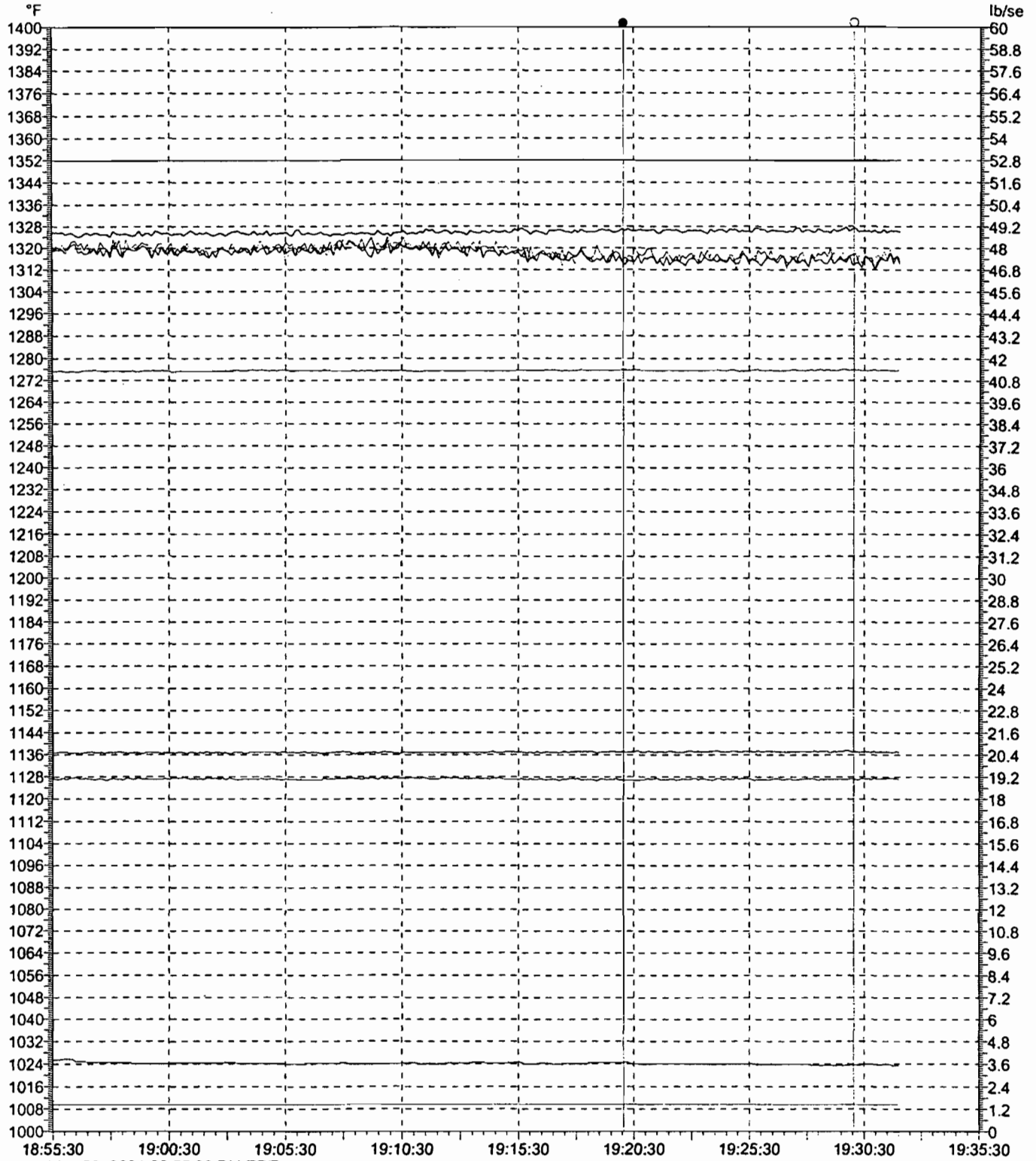
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1127.22	1127.61	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	20.5454	20.5267	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8B\ctif1a	80.2727	79.9821	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctif1b	79.4473	80.088	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	79.4658	79.7377	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0302891	0.03031	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	163.008	162.533	MW	Generator Watts Max Selected	0	200
	---	G8B\ICPD	206.625	206.601	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\icsgv	88.0252	88.0139	DGA	IGV angle in deg	0	100
	---	G8B\IWQ	2.46488	2.46518	lb/se	Water Injection Flow from Feedback	0	10
	---	G8B\WXJ	2.09866e+038	2.0989e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
	---	G8B\WYC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10



Wednesday, May 23, 2001 06:55:30 PM EDT

Left Cursor 05/23/01 07:10:06 PM.216 - Right Cursor 05/23/01 07:20:02 PM.972 - Difference 596.757 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B\TTXM	1127.61	1127	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.5261	20.5734	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	79.9757	78.9613	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	80.105	78.6103	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	79.7455	78.6103	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.0303122	0.0308599	#H/#A	Specific Humidity	0	100
		G8B\DWATT	162.543	163.39	MW	Generator Watts Max Selected	0	200
		G8B\ICPD	206.602	206.989	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	88.0139	88.0146	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46519	2.46503	lb/se	Water Injection Flow from Feedback	0	100
		G8B\WXJ	2.09892e+038	2.09878e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	100
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	100



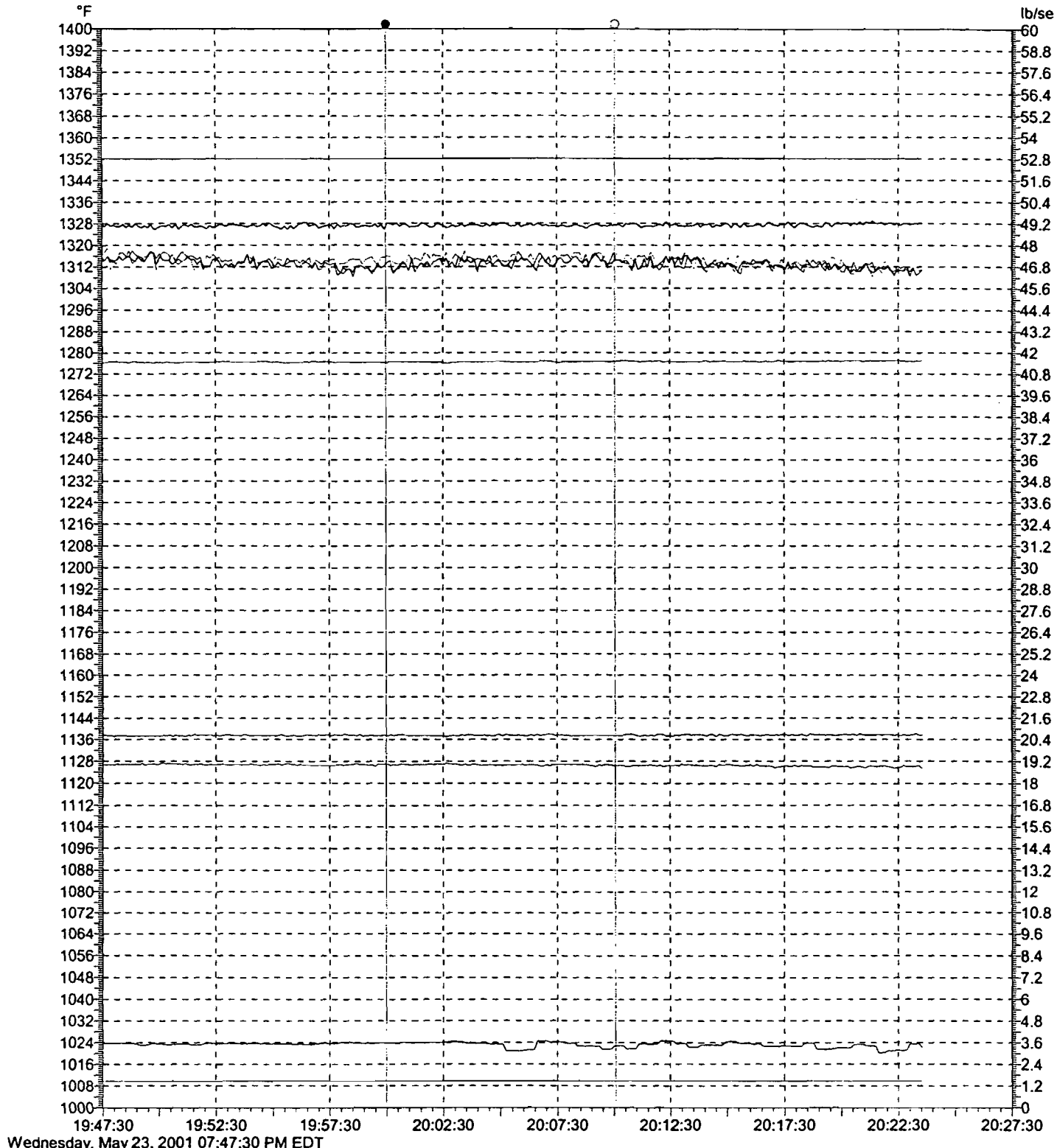
Wednesday, May 23, 2001 06:55:30 PM EDT

Left Cursor 05/23/01 07:20:02 PM.972 - Right Cursor 05/23/01 07:30:02 PM.972 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hi
<	---	G8B\TTXM	1127	1127.37	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	20.5734	20.5901	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	1
	---	G8B\ctif1a	78.9613	79.4211	°F	Compressor Inlet Thermocouple 1A	0	1
	---	G8B\ctif1b	78.6103	78.5172	°F	Compressor Inlet Thermocouple 1B	0	1
	---	G8B\CTIM	78.6103	78.5172	°F	Compressor Inlet Temperature	0	1
	---	G8B\CMHUM	0.0308599	0.0297602	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	163.39	163.58	MW	Generator Watts Max Selected	0	2
	---	G8B\CPD	206.989	206.96	psia	Compressor Discharge Press Max Select	0	3
	---	G8B\csgv	88.0146	88.0126	DGA	IGV angle in deg	0	1
	---	G8B\WQ	2.46503	2.4661	lb/se	Water Injection Flow from Feedback	0	1
	---	G8B\WXJ	2.09878e+038	2.0997e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	1

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performance.trn - Event 0 of 1 - Printed 05/23/01 08:24:52 PM

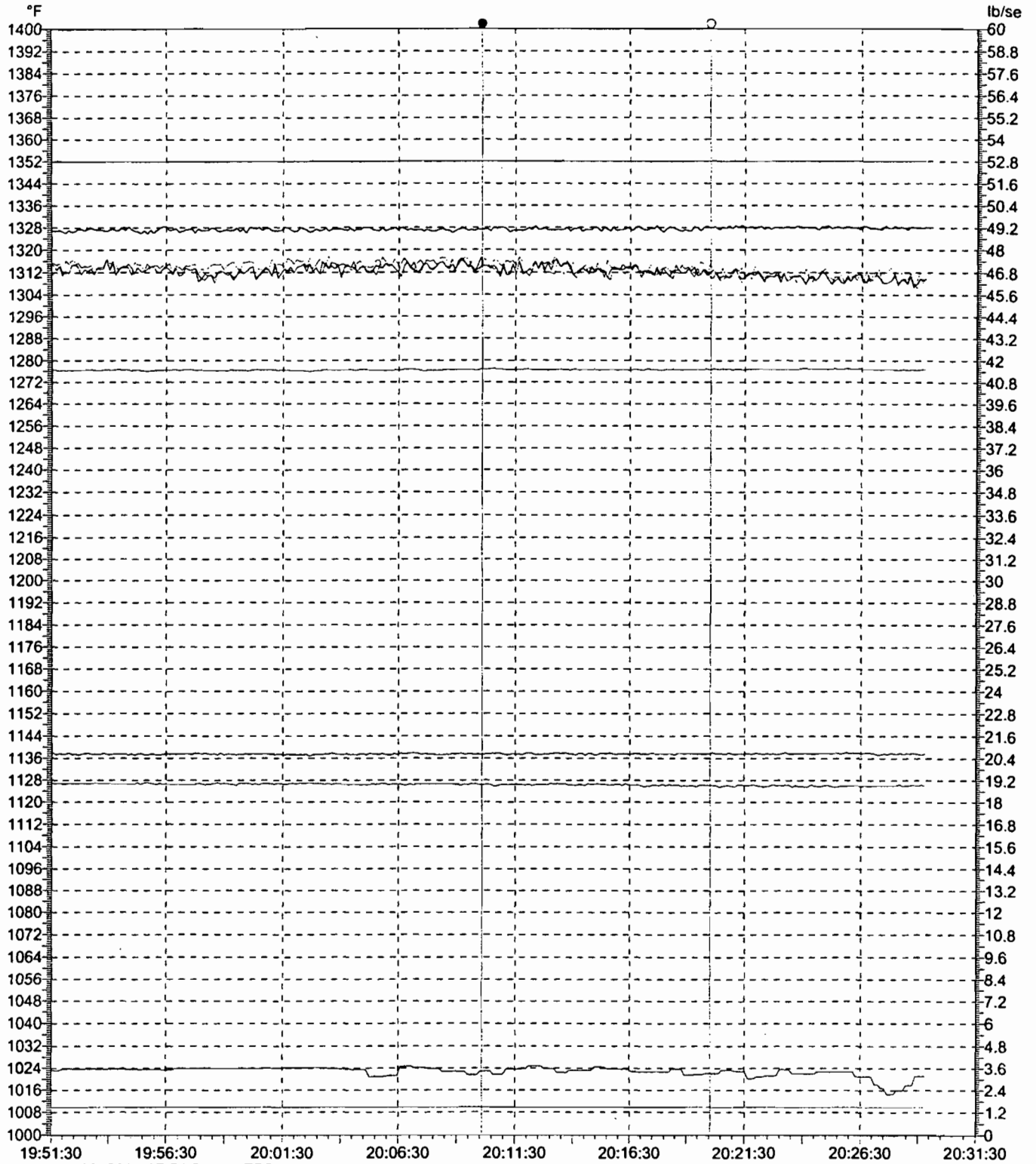


Wednesday, May 23, 2001 07:47:30 PM EDT

Left Cursor 05/23/01 07:59:59 PM.189 - Right Cursor 05/23/01 08:10:04 PM.054 - Difference 604.865 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<		G8B\TTXM	1126.94	1126.3	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.6233	20.6095	lb/se	Gas Fuel Flow	0	6
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	78.2114	79.0171	°F	Compressor Inlet Thermocouple 1A	0	10
		G8B\ctif1b	78.9287	78.7481	°F	Compressor Inlet Thermocouple 1B	0	10
		G8B\CTIM	78.2114	78.5068	°F	Compressor Inlet Temperature	0	10
		G8B\CMHUM	0.0298689	0.02857	#H/#A	Specific Humidity	0	10
		G8B\DWATT	163.583	163.639	MW	Generator Watts Max Selected	0	20
		G8B\CPD	207.151	207.531	psia	Compressor Discharge Press Max Select	0	30
		G8B\csgv	88.0029	88.003	DGA	IGV angle in deg	0	10
		G8B\WQ	2.46582	2.4658	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.09945e+038	2.09944e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
		G8B\WXO	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10

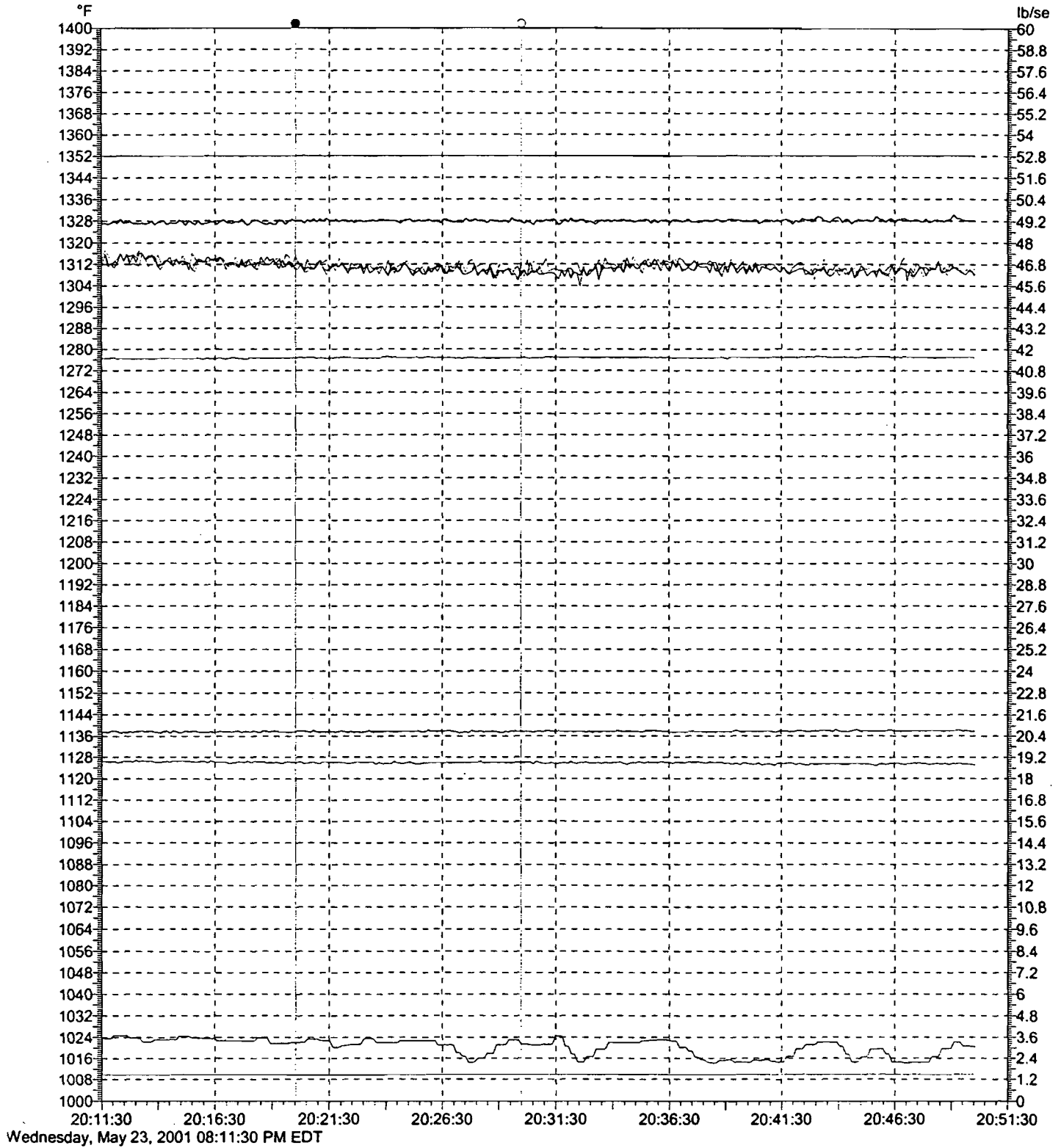
*100-10 Load
Run 3*



Wednesday, May 23, 2001 07:51:30 PM EDT

Left Cursor 05/23/01 08:10:04 PM.054 - Right Cursor 05/23/01 08:20:01 PM.351 - Difference 597.297 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1126.3	1126.18	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	20.609	20.6622	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8B\ctif1a	79.0338	77.5408	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctif1b	78.7313	78.5608	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	78.5048	77.9709	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0285699	0.0276522	#H/#A	Specific Humidity	0	0.05
	---	G8B\DWATT	163.639	163.962	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	207.533	207.472	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	88.0026	88.0186	DGA	IGV angle in deg	0	100
	---	G8B\WQ	2.46581	2.46618	lb/se	Water Injection Flow from Feedback	0	10
	---	G8B\WXJ	2.09945e+038	2.09976e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
	---	G8B\WXK			ratio	Ratio of Required Fuel to NOx Water Flow	0	10



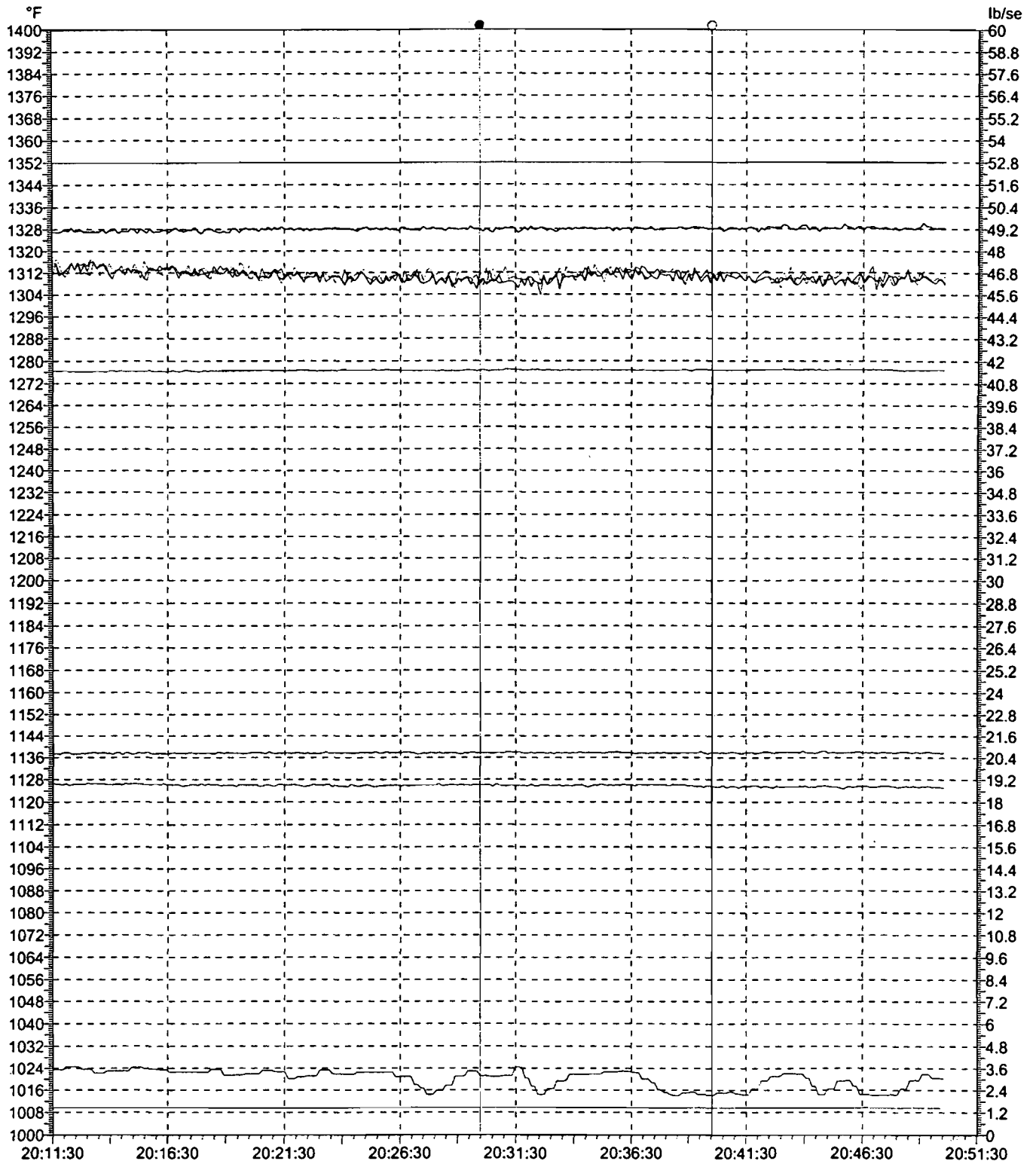
Wednesday, May 23, 2001 08:11:30 PM EDT

Left Cursor 05/23/01 08:20:01 PM.351 - Right Cursor 05/23/01 08:29:58 PM.108 - Difference 596.757 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B\TTXM	1126.19	1126.18	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.6605	20.6843	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8B\ctif1a	77.5431	76.9017	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	78.5784	78.1566	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	77.9587	77.242	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.0276517	0.0266265	#H/#A	Specific Humidity	0	100
		G8B\DWATT	163.957	163.959	MW	Generator Watts Max Selected	0	200
		G8B\CPD	207.464	207.576	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	88.0179	88.013	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46625	2.46525	lb/se	Water Injection Flow from Feedback	0	100
		G8B\WXJ	2.09982e+038	2.09897e+0...	ratio	Ratio of Actual Fuel to NOx Water Flow	0	100
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	100

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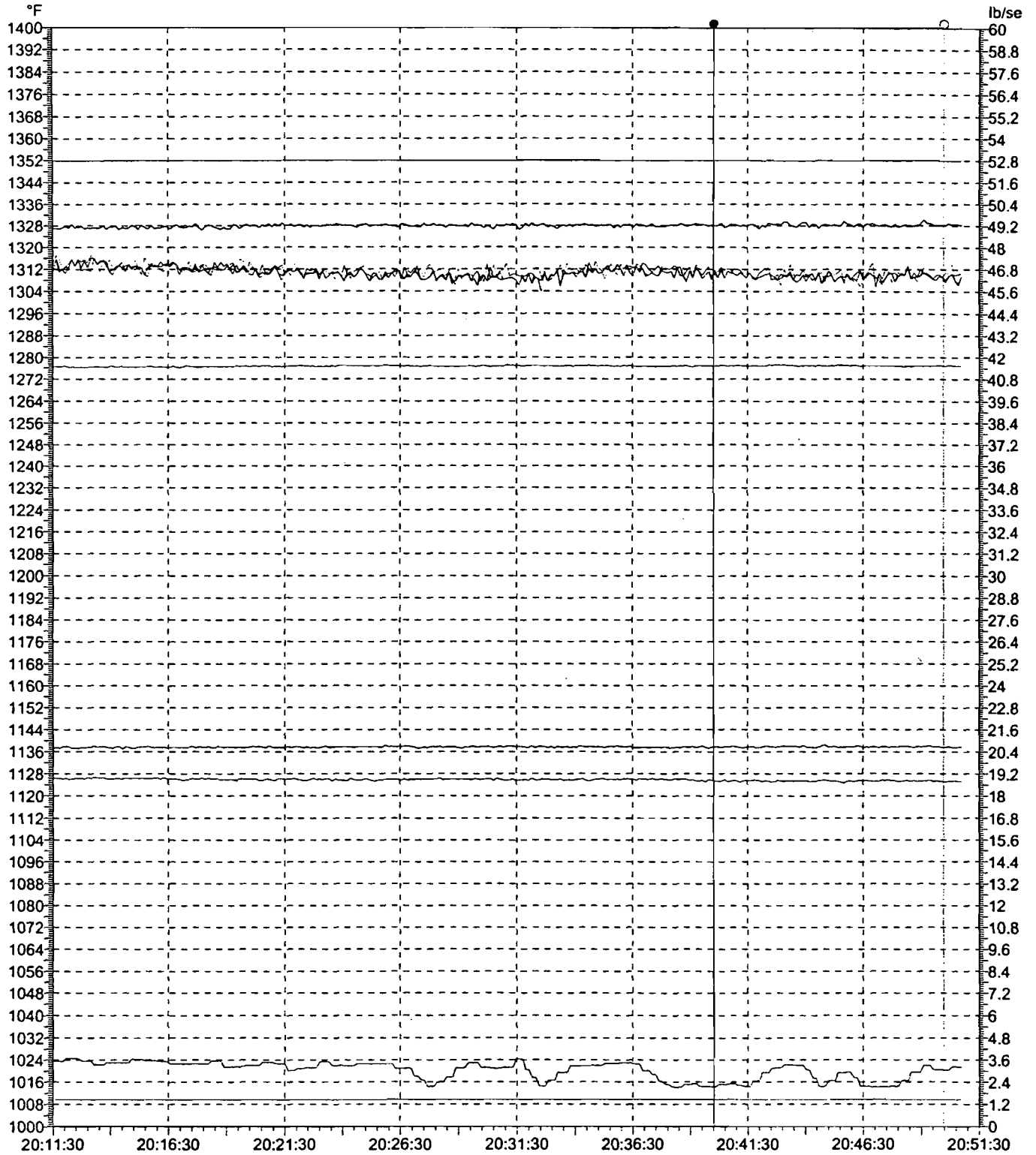
performance.tn - Event 0 of 1 - Printed 05/23/01 08:51:37 PM



Wednesday, May 23, 2001 08:11:30 PM EDT

Left Cursor 05/23/01 08:29:58 PM.108 - Right Cursor 05/23/01 08:40:00 PM.810 - Difference 602.703 seconds

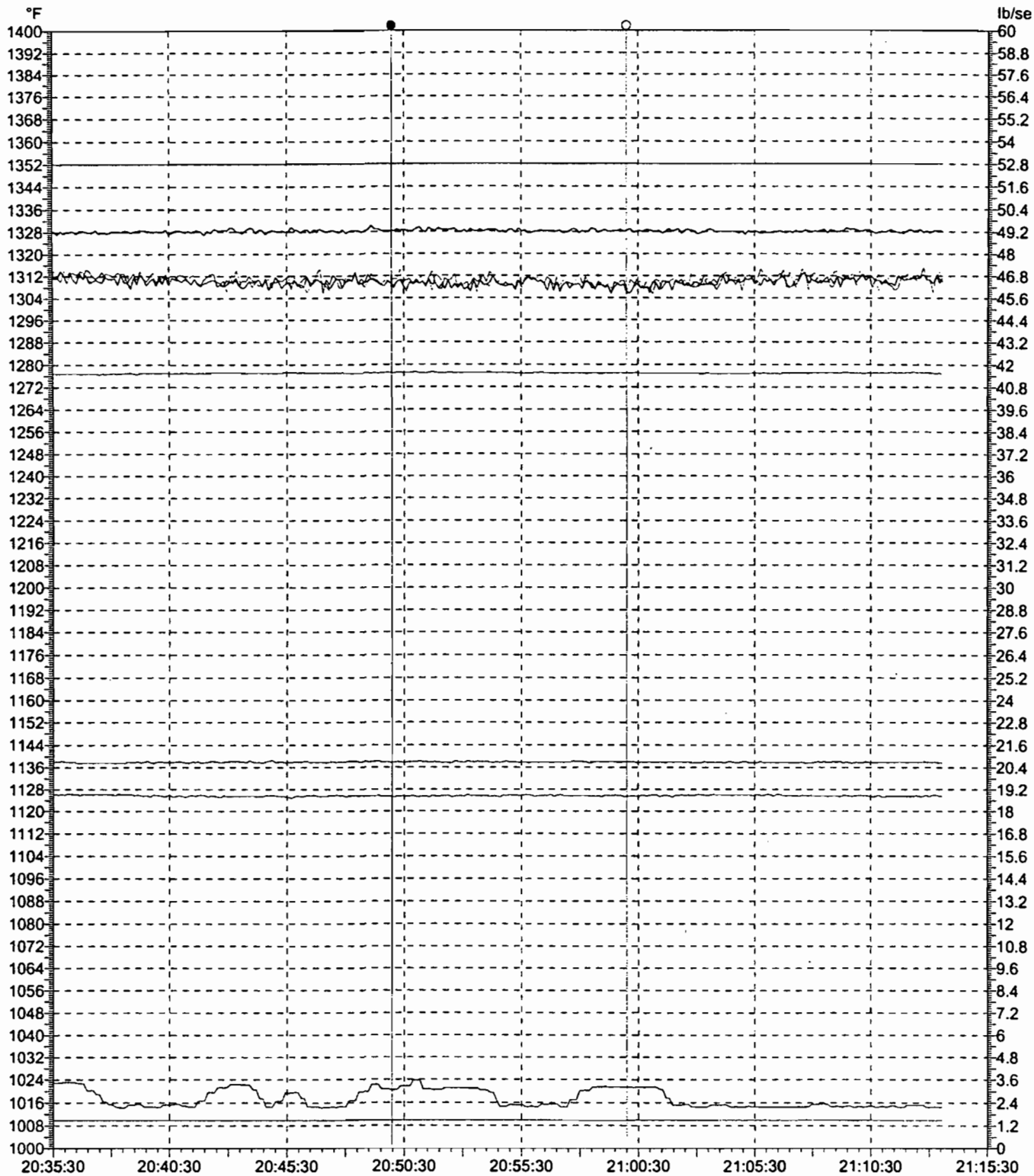
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hi
<		G8B\TTXM	1126.18*	1125.79	°F	Exhaust Temp Median Corrected By Average	1000	14
>		G8B\FQG	20.6843*	20.6911	lb/se	Gas Fuel Flow	0	1
		G8B\FQLM1	0*	0	lb/se	Liquid Fuel Mass Flow	0	1
		G8B\ctif1a	76.9017*	77.5416	°F	Compressor Inlet Thermocouple 1A	0	1
		G8B\ctif1b	78.1566*	77.5648	°F	Compressor Inlet Thermocouple 1B	0	1
		G8B\CTIM	77.242*	77.3777	°F	Compressor Inlet Temperature	0	1
		G8B\CMHUM	0.0266265*	0.0180099	#H/#A	Specific Humidity	0	1
		G8B\DWATT	163.959*	164.071	MW	Generator Watts Max Selected	0	2
		G8B\CPD	207.576*	207.755	psia	Compressor Discharge Press Max Select	0	3
		G8B\csgv	88.013*	88.022	DGA	IGV angle in deg	0	1
		G8B\WQ	2.46525*	2.46729	lb/se	Water Injection Flow from Feedback	0	1
		G8B\WXJ	2.09897e+038*	2.1007e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	1
		G8B\WXC	0*	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	1



Wednesday, May 23, 2001 08:11:30 PM EDT

Left Cursor 05/23/01 08:40:00 PM.810 - Right Cursor 05/23/01 08:49:58 PM.108 - Difference 597.297 seconds

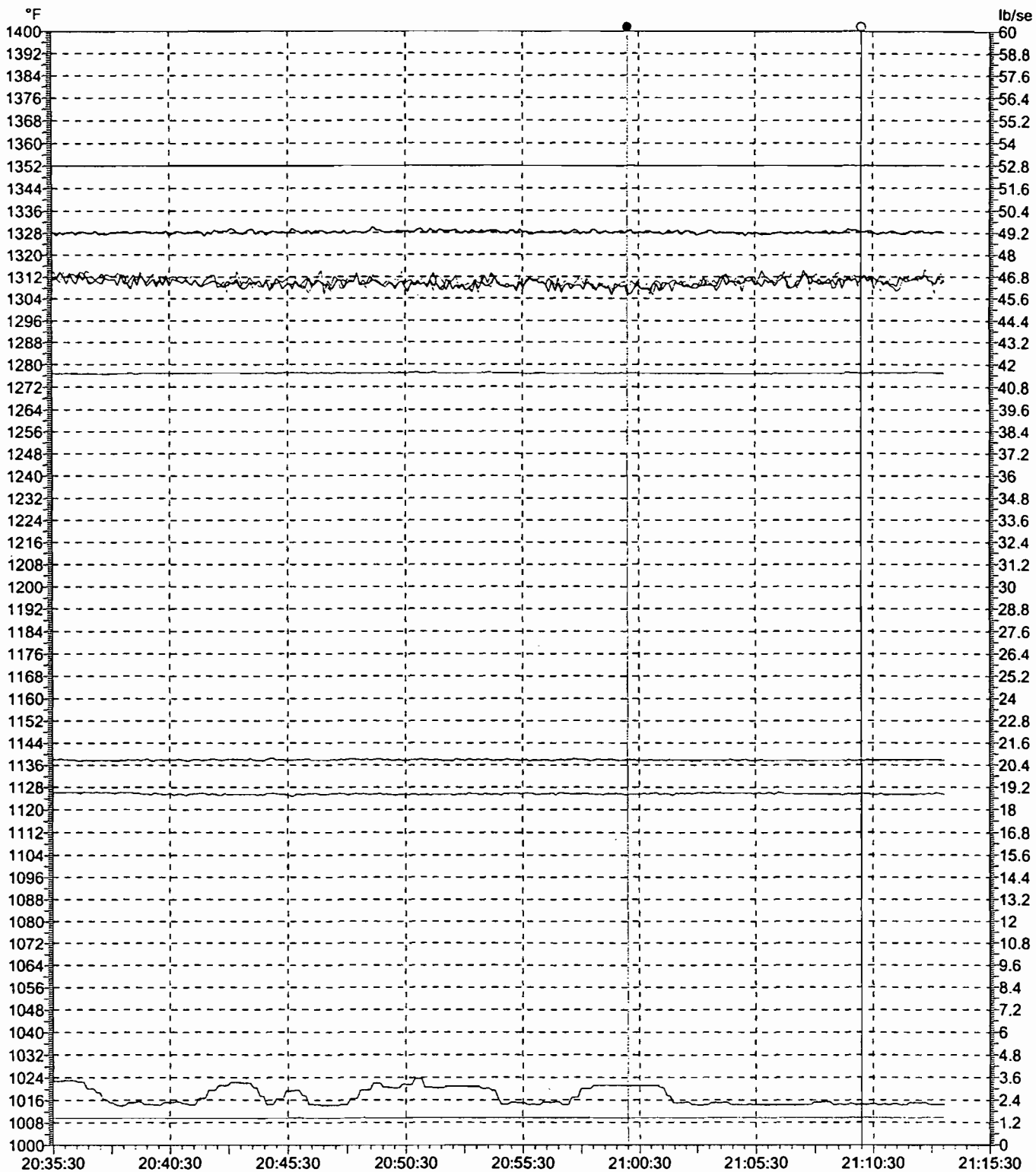
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<		G8B\ITTXM	1125.79	1125.41	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.6911	20.6606	lb/se	Gas Fuel Flow	0	6
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	77.5416	77.2214	°F	Compressor Inlet Thermocouple 1A	0	10
		G8B\ctif1b	77.5648	77.4453	°F	Compressor Inlet Thermocouple 1B	0	10
		G8B\CTIM	77.3777	77.2282	°F	Compressor Inlet Temperature	0	10
		G8B\CMHUM	0.0180099	0.0255774	#H/#A	Specific Humidity	0	10
		G8B\DWATT	164.071	164.173	MW	Generator Watts Max Selected	0	20
		G8B\ICPD	207.755	207.796	psia	Compressor Discharge Press Max Select	0	30
		G8B\csgv	88.022	88.0157	DGA	IGV angle in deg	0	10
		G8B\WQ	2.46729	2.46715	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.1007e+038	2.10059e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10



Wednesday, May 23, 2001 08:35:30 PM EDT

Left Cursor 05/23/01 08:49:58 PM.108 - Right Cursor 05/23/01 09:00:00 PM.270 - Difference 602.162 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	1	G8B\TTXM	1125.41	1125.46	°F	Exhaust Temp Median Corrected By Average	1000	14C
>	2	G8B\FQG	20.6608	20.7032	lb/se	Gas Fuel Flow	0	6
	3	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	1C
	4	G8B\ctif1a	77.213	76.5932	°F	Compressor Inlet Thermocouple 1A	0	1C
	5	G8B\ctif1b	77.4525	76.9021	°F	Compressor Inlet Thermocouple 1B	0	1C
	6	G8B\CTIM	77.2245	76.6652	°F	Compressor Inlet Temperature	0	1C
	7	G8B\CMHUM	0.0255777	0.026677	#H/#A	Specific Humidity	0	0.
	8	G8B\DWATT	164.172	164.183	MW	Generator Watts Max Selected	0	2C
	9	G8B\CPD	207.794	207.722	psia	Compressor Discharge Press Max Select	0	3C
	10	G8B\csgv	88.0157	88.0127	DGA	IGV angle in deg	0	1C
	11	G8B\WQJ	2.46713	2.46702	lb/se	Water Injection Flow from Feedback	0	1C
	12	G8B\WXJ	2.10057e+038	2.10047e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0



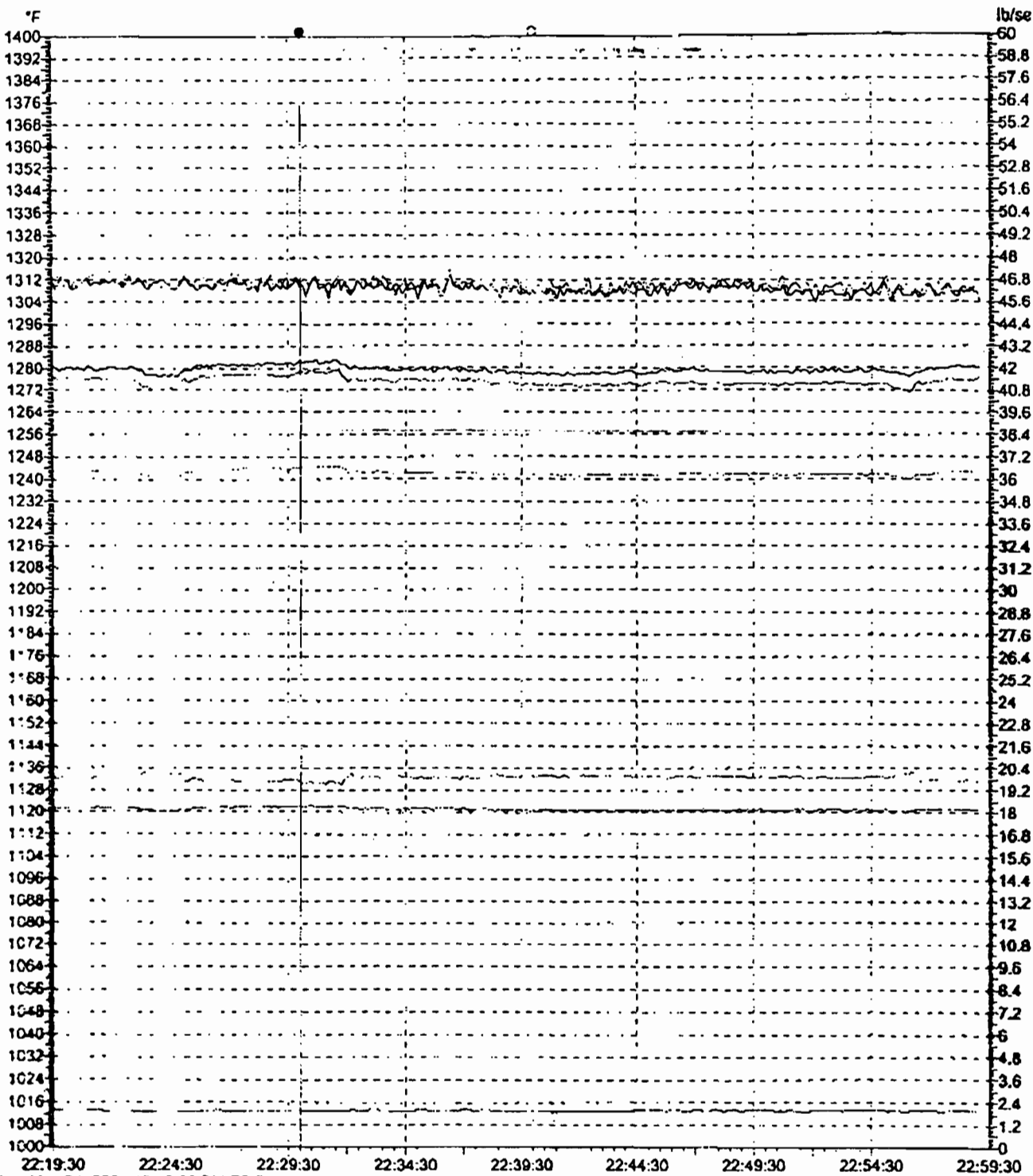
Wednesday, May 23, 2001 08:35:30 PM EDT

Left Cursor 05/23/01 09:00:00 PM.270 - Right Cursor 05/23/01 09:10:00 PM.270 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<		G8B\TTXM	1125.46	1125.87	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	20.7032	20.6625	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	76.5932	77.7417	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	76.9021	78.33	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	76.6652	77.7417	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.026677	0.0184706	#H/#A	Specific Humidity	0	0
		G8B\DWATT	164.183	164.099	MW	Generator Watts Max Selected	0	200
		G8B\CPD	207.722	207.766	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	88.0127	88.0134	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46702	2.46865	lb/se	Water Injection Flow from Feedback	0	10
		G8B\WXJ	2.10047e+038	2.10186e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	10
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	10

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performance.tn - Event 0 of 1 - Printed 05/24/01 11:00:31 PM



Thursday, May 24, 2001 10:19:30 PM EDT

Left Cursor 05/24/01 10:30:00 PM.810 - Right Cursor 05/24/01 10:39:59 PM.729 - Difference 598.919 seconds

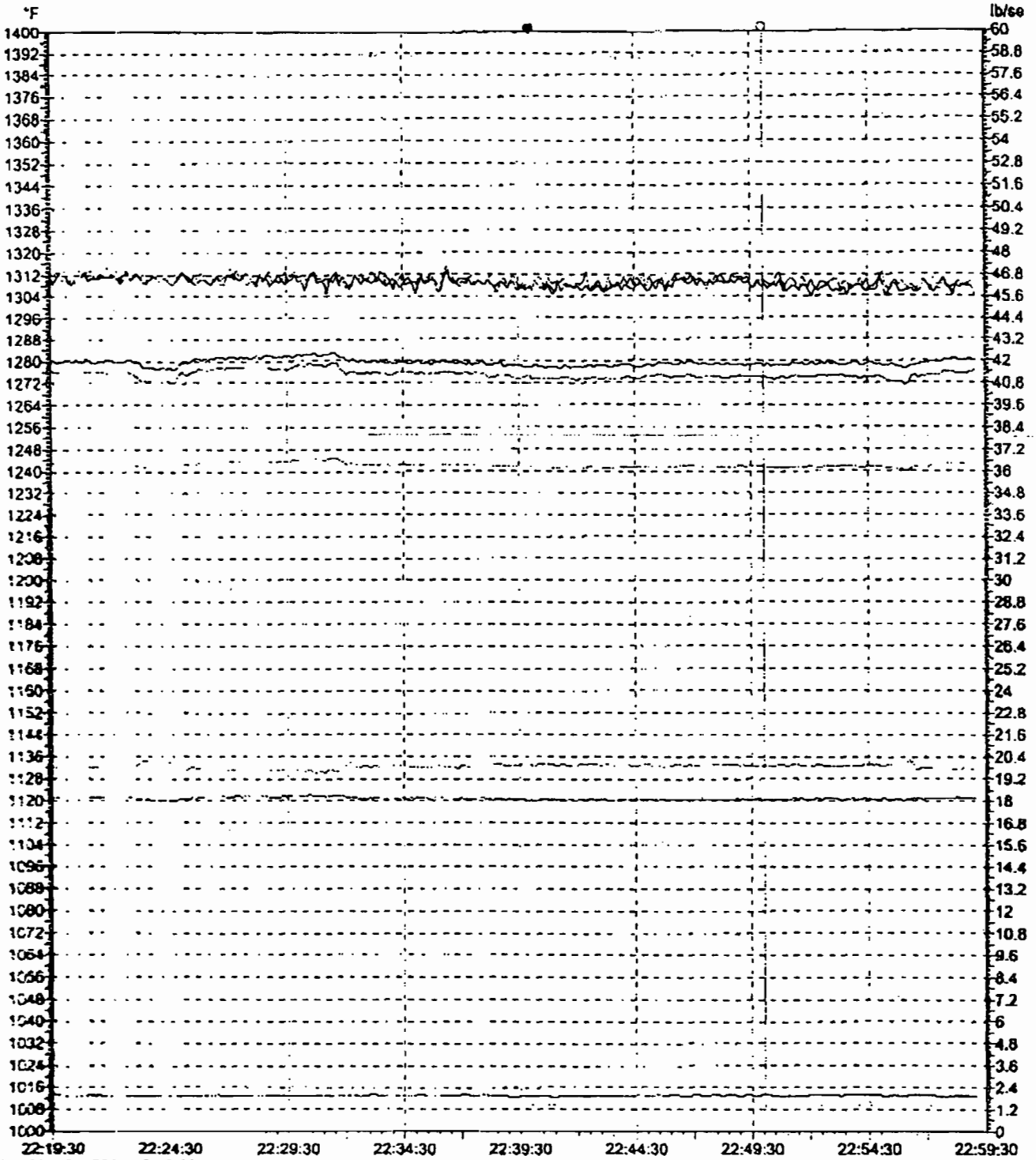
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B:TTXM	1130.97	1132.99	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B:FQG	18.2883	18.0857	lb/se	Gas Fuel Flow	0	60
	---	G8B:FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B:ctf1a	77.3677	76.9676	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B:ctf1c	77.7828	76.9212	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B:CTIM	77.3677	76.9425	°F	Compressor Inlet Temperature	0	100
	---	G8B:CMHUM	0.0163876	0.0163698	#H/#A	Specific Humidity	0	0.5
	---	G8B:DWATT	141.226	138.8	MW	Generator Watts Max Selected	0	200
	---	G8B:CPD	183.29	181.305	psia	Compressor Discharge Press Max Select	0	300
	---	G8B:csgr	69.662	68.5587	DGA	IGTV angle in deg	0	100
	---	G6E:WC	2.47666	2.47561	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B:WXJ	2.0868e+038	2.10779e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

45% Run 1

M-21

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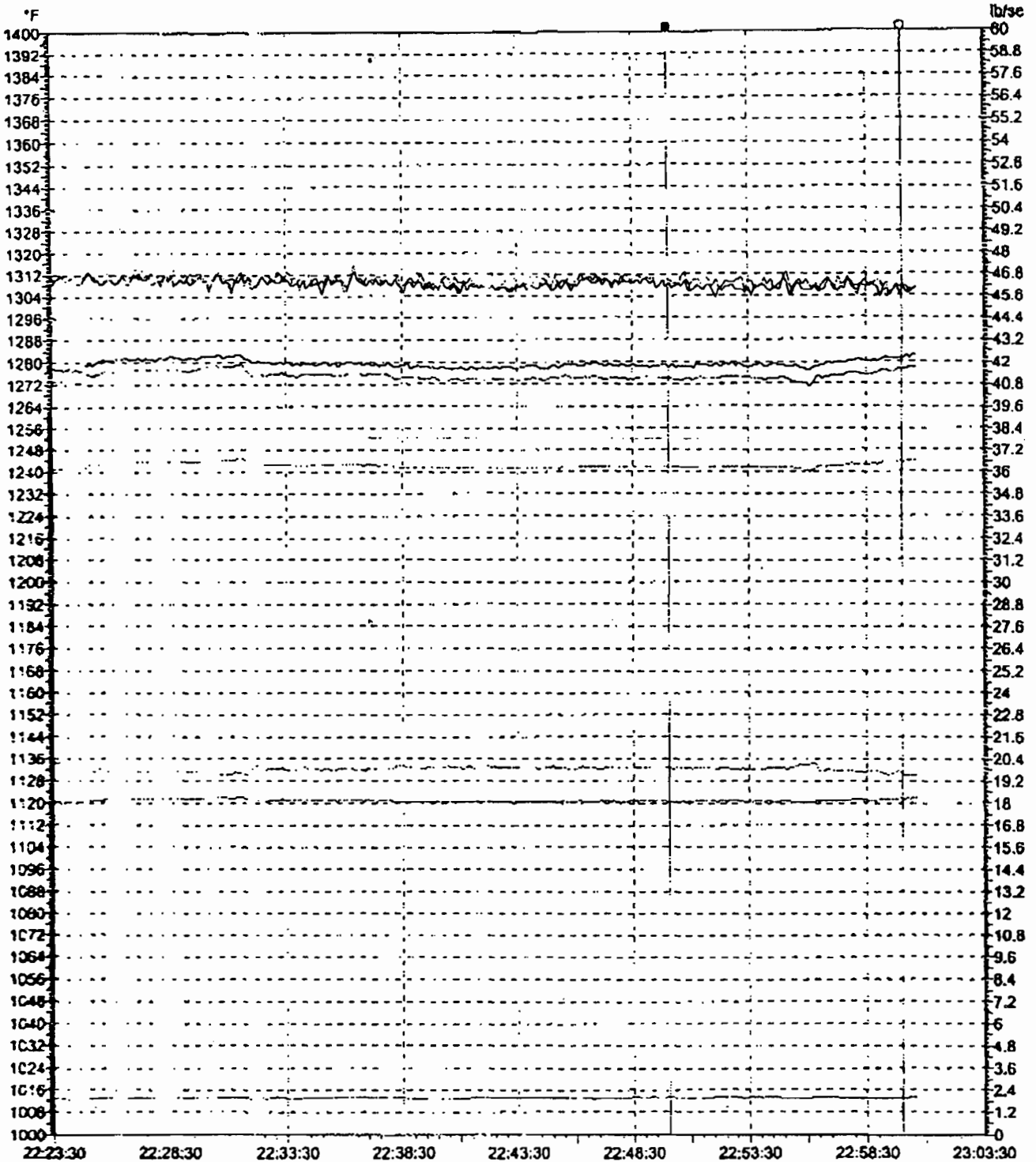
performance.m - Event 0 of 1 - Printed 05/24/01 11:00:53 PM



Thursday, May 24, 2001 10:19:30 PM EDT

Left Cursor 05/24/01 10:39:59 PM.729 - Right Cursor 05/24/01 10:50:02 PM.432 - Difference 802.703 seconds

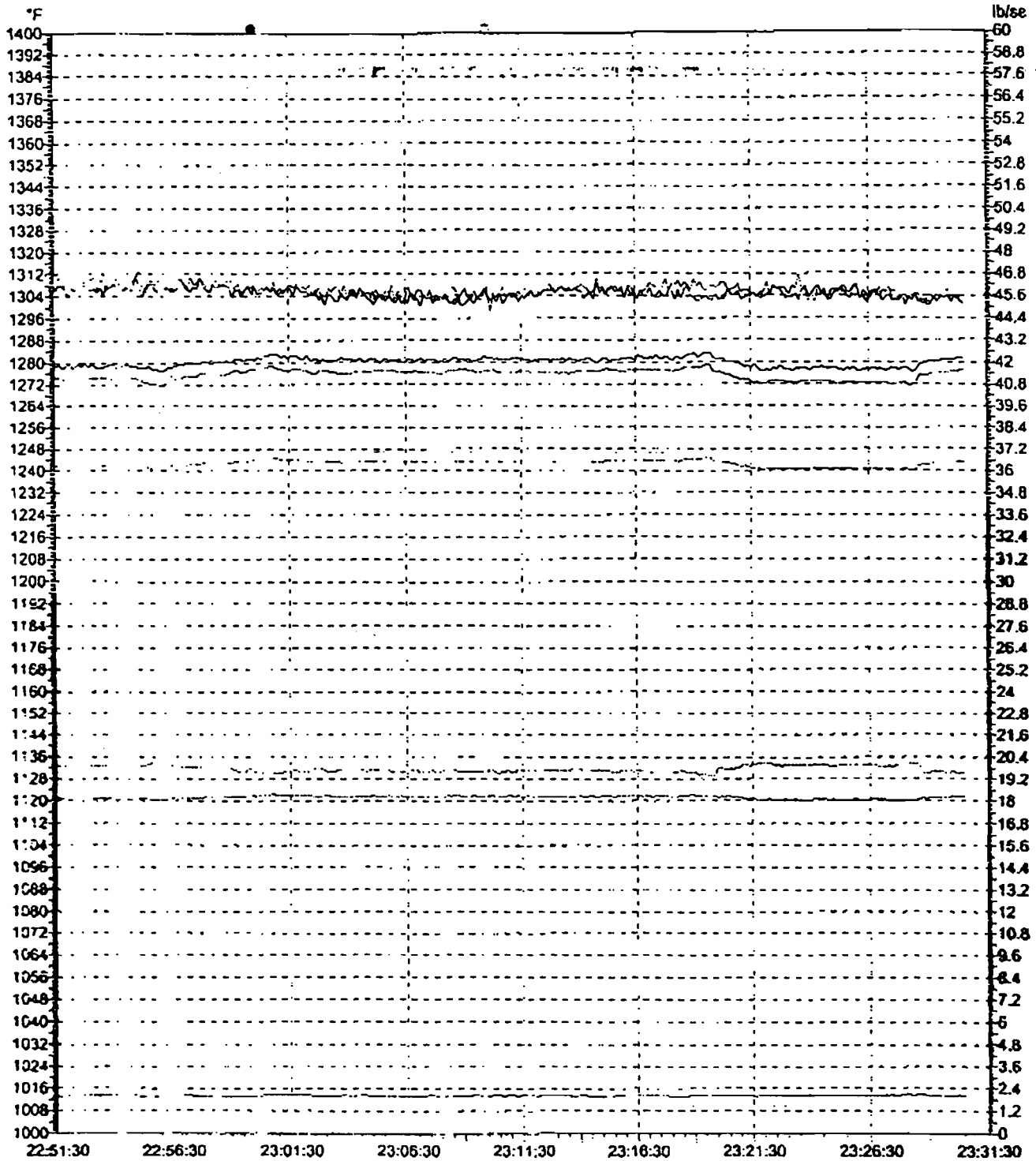
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B:TTXM	1132.99	1132.89	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B:FQFG	18.0857	18.1292	lb/sec	Gas Fuel Flow	0	60
	---	G8B:FQLM1	0	0	lb/sec	Liquid Fuel Mass Flow	0	100
	---	G8B:ctf1a	76.9676	77.5046	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B:ctf1b	76.9212	77.0695	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B:CTIM	76.9425	77.0695	°F	Compressor Inlet Temperature	0	100
	---	G8B:CMHUM	0.0163698	0.0169839	#H/#A	Specific Humidity	0	0.5
	---	G8B:DWATT	138.8	139.059	MW	Generator Watts Max Selected	0	200
	---	G8B:CPD	181.305	181.375	psia	Compressor Discharge Press Max Select	0	300
	---	G8B:csqv	68.5587	68.5633	DGA	IGV angle in deg	0	100
	---	G6E:WQ	2.47567	2.47737	lb/sec	Water Injection Flow from Feedback	0	100
	---	G8B:WXL	2.10779e+038	2.10928e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2



Thursday, May 24, 2001 10:23:30 PM EDT

Left Cursor 05/24/01 10:50:02 PM.432 - Right Cursor 05/24/01 10:59:59 PM.189 - Difference 596.757 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B:TTXM	1132.88	1130.67	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B:FOG	18.1284	18.2667	lb/se	Gas Fuel Flow	0	60
	---	G8B:FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B:ctf1a	77.5047	76.4664	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B:ctf1b	77.0622	76.9004	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B:CTIM	77.0622	76.4664	°F	Compressor Inlet Temperature	0	100
	---	G8B:CMHUM	0.0169844	0.0165488	#H/#A	Specific Humidity	0	0.5
	---	G8B:DWATT	139.074	140.595	MW	Generator Watts Max Selected	0	200
	---	G8B:CPD	181.377	182.92	psia	Compressor Discharge Press Max Select	0	300
	---	G8B:csqv	68.5607	69.4132	DGA	IGV angle in deg	0	100
	---	G8E:WO	2.47733	2.47651	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B:WX:	2.10926e+038	2.10856e+C38	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

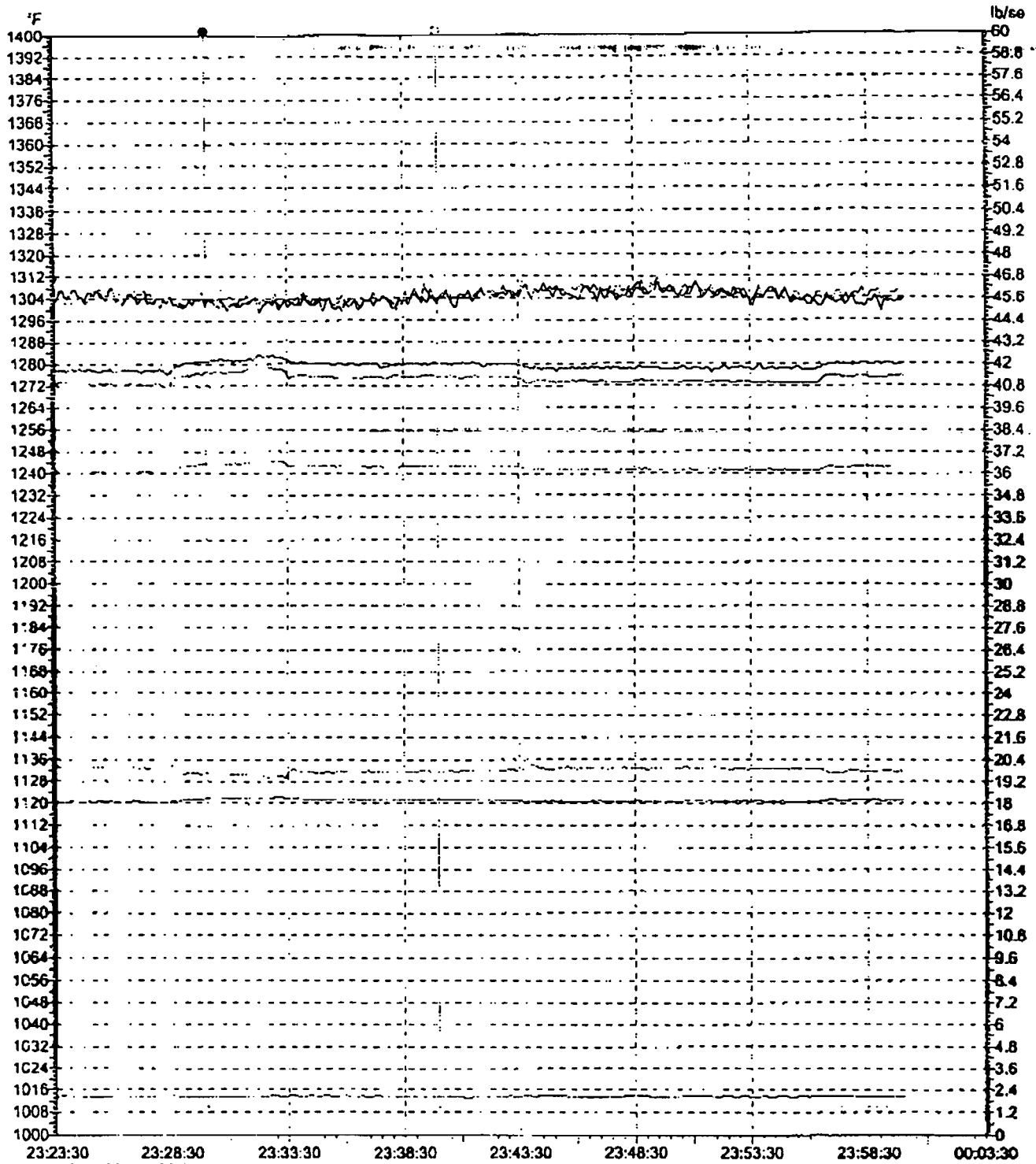


Thursday, May 24, 2001 10:51:30 PM EDT

Left Cursor 05/24/01 10:59:59 PM.189 - Right Cursor 05/24/01 11:10:00 PM.810 - Difference 601.622 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G88:TTXM	1130.68	1131	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G88:FQG	18.267	18.2666	lb/se	Gas Fuel Flow	0	60
		G88:FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G88:ctf1a	76.4613	76.6934	°F	Compressor Inlet Thermocouple 1A	0	100
		G88:ctf1c	76.8991	76.1815	°F	Compressor Inlet Thermocouple 1B	0	100
		G88:CTUM	76.4813	76.1635	°F	Compressor Inlet Temperature	0	100
		G88:CMHUM	0.0165469	0.0163725	#H/#A	Specific Humidity	0	0
		G88:DWATT	140.597	140.876	MW	Generator Watts Max Selected	0	0
		G88:CPD	182.921	182.598	psia	Compressor Discharge Press Max Select	0	0
		G88:csqv	69.4139	69.2222	DGA	IGV angle in deg	0	100
		G88:WO	2.47652	2.47706	lb.se	Water Injection Flow from Feedback	0	100
		G88:WXJ	2.10856e+038	2.10903e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G88:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

M-24



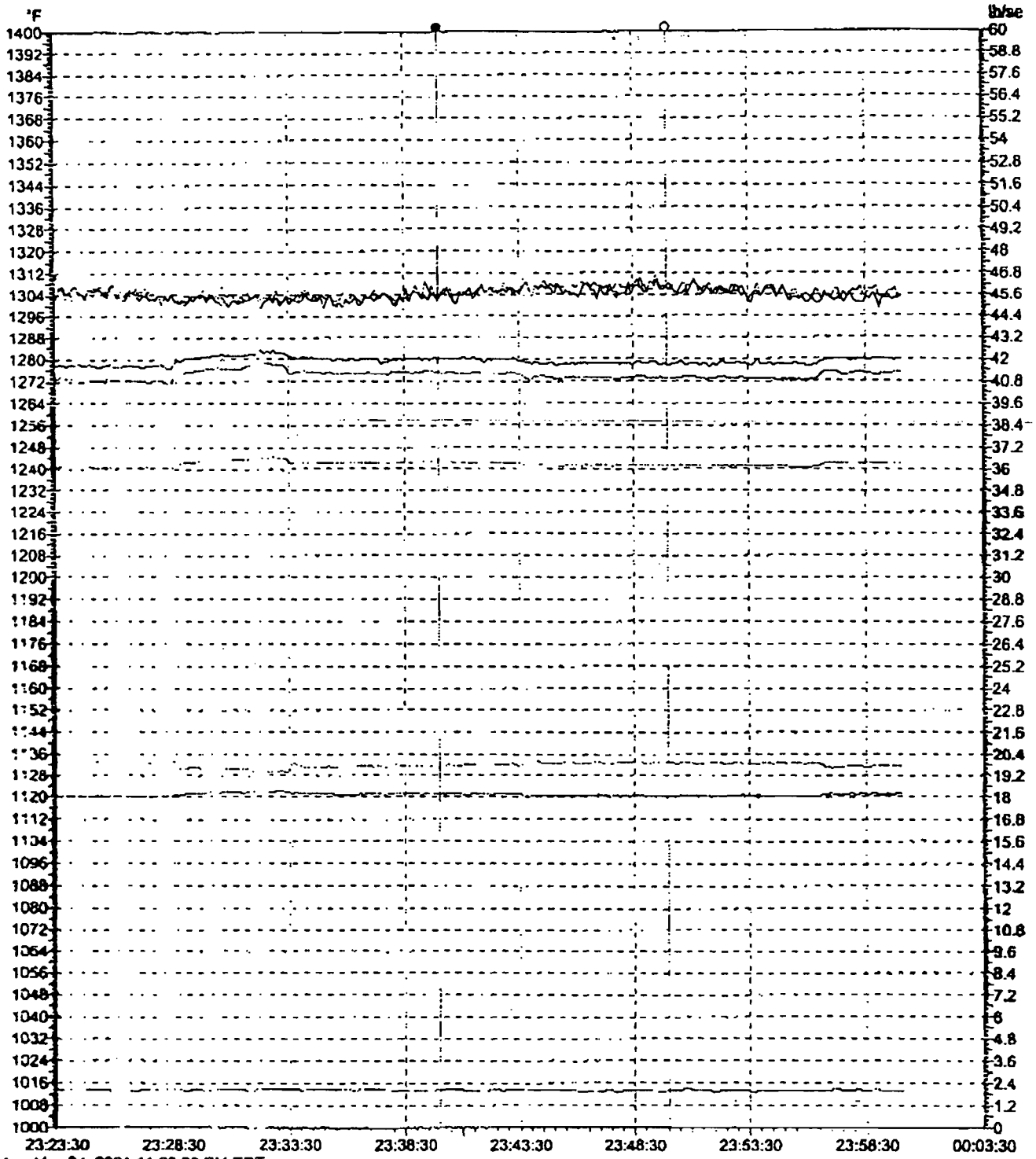
Thursday, May 24, 2001 11:23:30 PM EDT

Left Cursor 05/24/01 11:30:00 PM.810 - Right Cursor 05/24/01 11:39:59 PM.189 - Difference 598.378 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B:TTXM	1131	1131.26	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B:FQG	18.2611	18.182	lb/se	Gas Fuel Flow	0	60
	---	G8B:FQLM11	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B:ctf1a	75.8392	75.9786	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B:ctf1b	75.3314	75.5534	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B:CTIM	75.5409	75.5163	°F	Compressor Inlet Temperature	0	100
	---	G8B:CMHUM	0.0167429	0.0169933	#H/#A	Specific Humidity	0	0.5
	---	G8B:DWATT	140.474	139.857	MW	Generator Watts Max Selected	0	200
	---	G8B:CPD	182.515	181.999	psia	Compressor Discharge Press Max Select	0	300
	---	G8B:csqv	69.2097	68.8075	DGA	IGV angle in deg	0	100
	---	G5E:W0	2.47838	2.47722	lb:se	Water Injection Flow from Feedback	0	100
	---	G8E:WXJ	2.11014e+038	2.10916e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

85%
Run 2

M-25

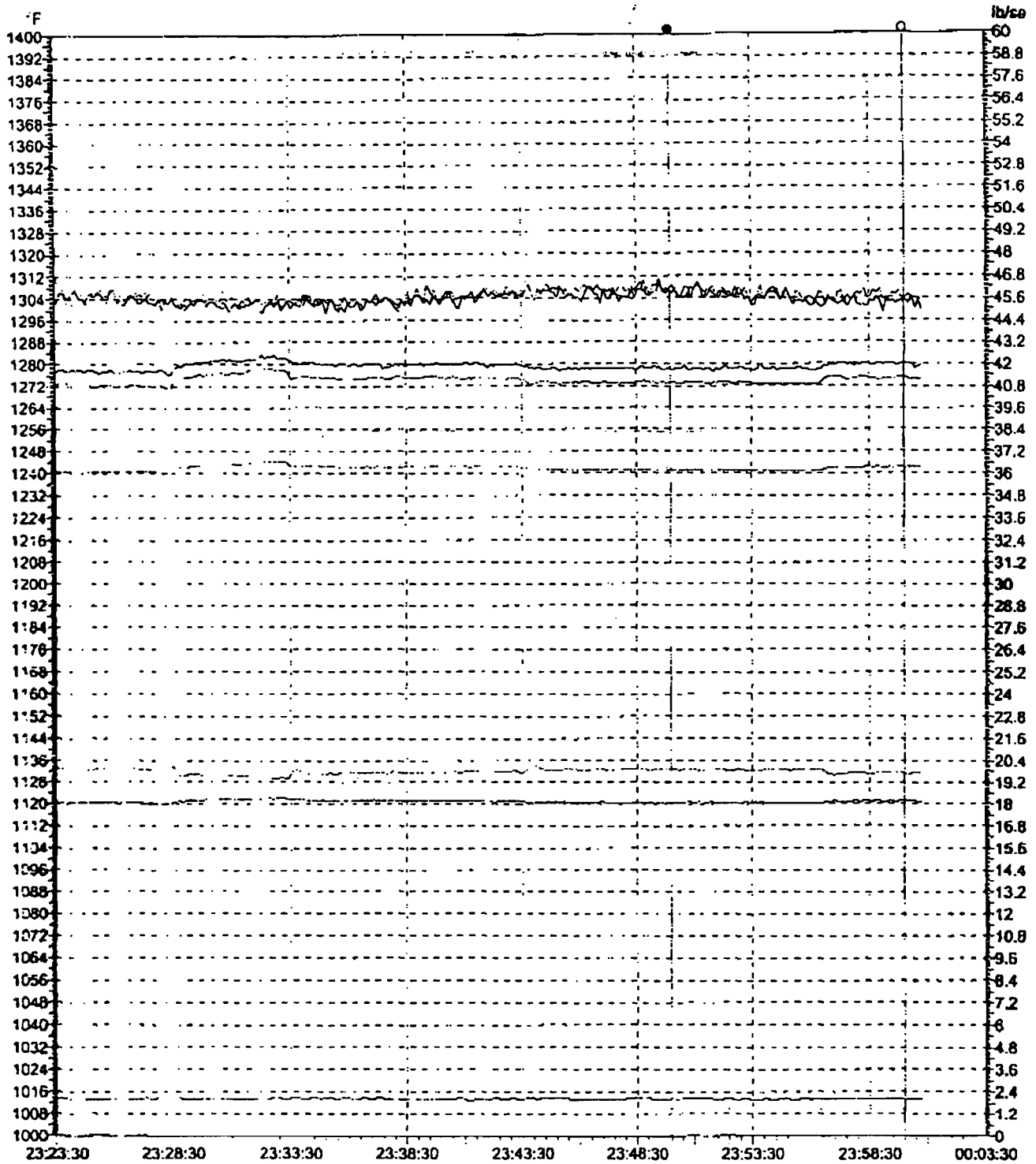


Thursday, May 24, 2001 11:23:30 PM EDT

Left Cursor 05/24/01 11:39:59 PM.189 - Right Cursor 05/24/01 11:49:59 PM.189 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1131.26	1133.01	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	18.182	18.1068	lb/se	Gas Fuel Flow	0	60
	---	G8B\FOLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\ctif1a	75.9786	76.9053	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctif1b	75.5534	76.647	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	75.5163	76.647	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMMUM	0.0169933	0.0169877	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	139.857	138.044	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	181.999	181.107	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	68.8075	68.3414	DGA	IGV angle in deg	0	100
	---	G8B\WO	2.47722	2.47792	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10916e+038	2.10967e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

m-26

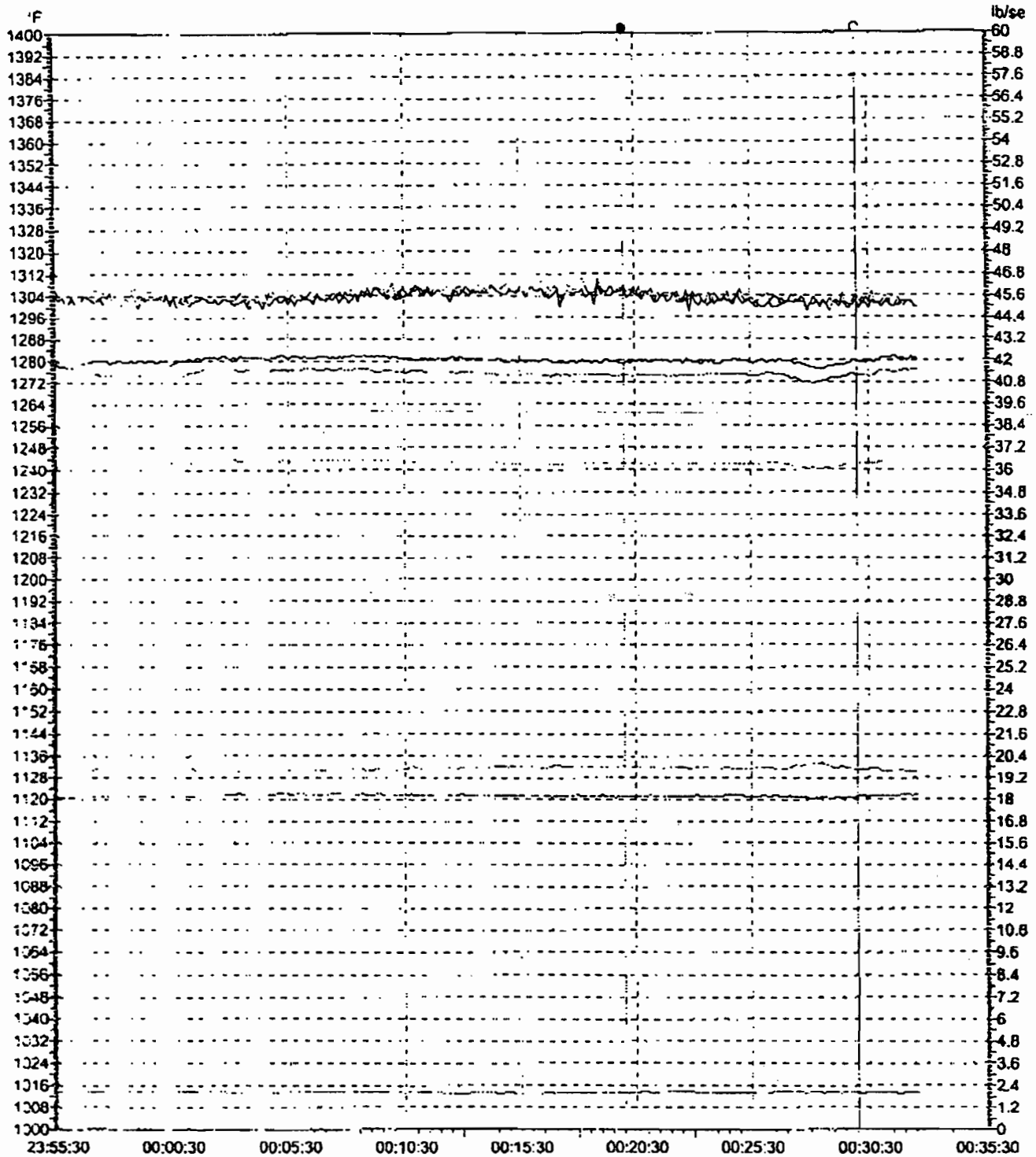


Thursday, May 24, 2001 11:23:30 PM EDT

Left Cursor 05/24/01 11:49:59 PM.189 - Right Cursor 05/24/01 11:59:59 PM.189 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1133.01	1131.64	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	18.1068	18.2053	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\cst1a	76.9053	75.8206	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\cst1b	76.647	75.8552	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	76.647	75.7356	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0169877	0.0170208	#H/#A	Specific Humidity	0	0.5
	---	G8B\DWATT	139.044	139.93	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	181.107	181.759	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	68.3414	68.8579	DGA	IGV angle in deg	0	100
	---	G6E\A/O	2.47782	2.47848	lb-se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10967e+038	2.11023e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

m-27



Thursday, May 24, 2001 11:55:30 PM EDT

Left Cursor 05/25/01 12:20:00 AM.270 - Right Cursor 05/25/01 12:30:00 AM.270 - Difference 600 seconds

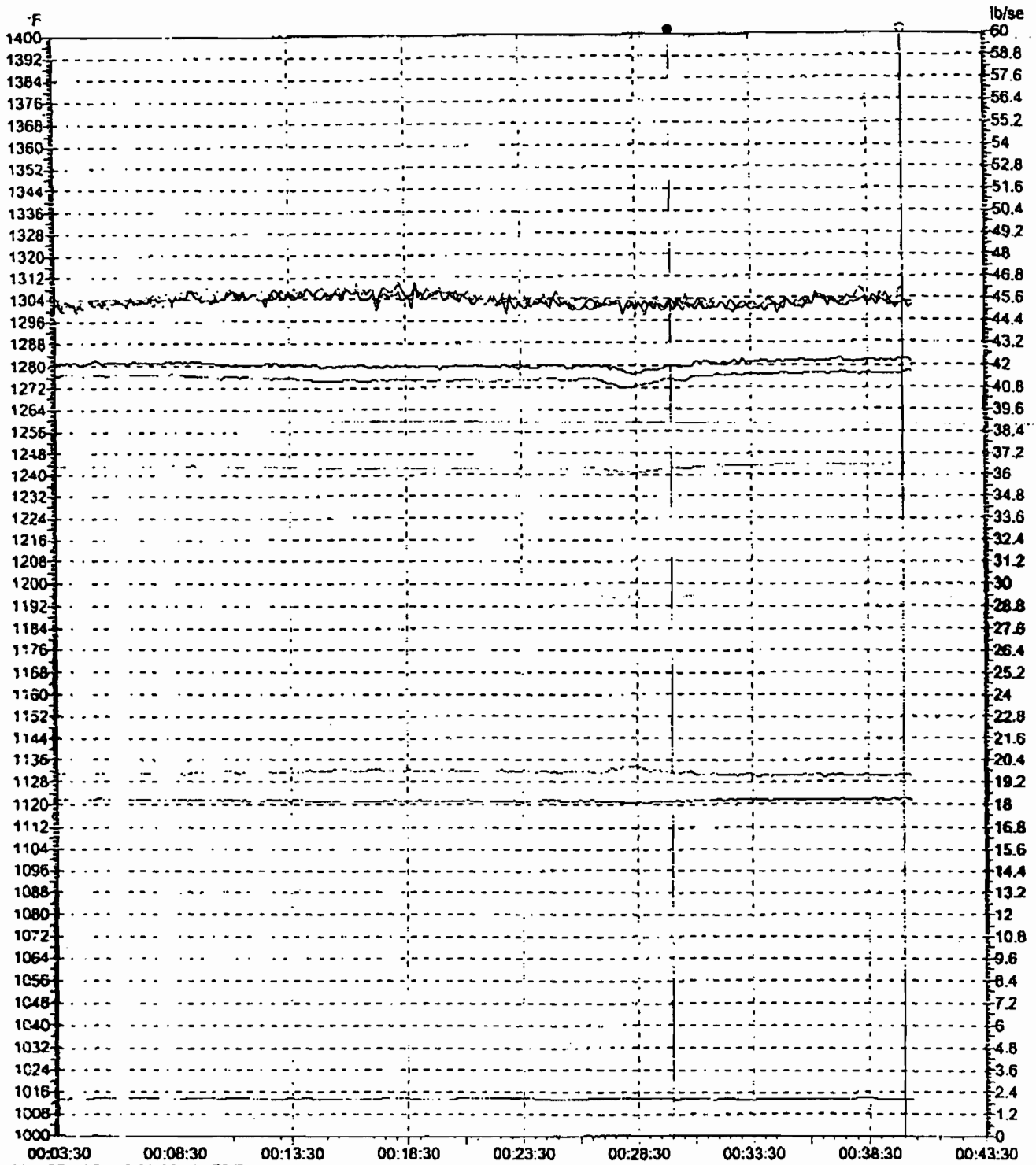
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8BTTXM	1132.16	1131.08	°F	Exhaust Temp Median Corrected By Average
>		G8B\FQG	18.1317	18.155	lb/se	Gas Fuel Flow
		G8E FQUM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8B\ctf1a	76.6922	75.8907	°F	Compressor Inlet Thermocouple 1A
		G8B\ctf1b	76.9303	75.4907	°F	Compressor Inlet Thermocouple 1B
		G8B\CTIM	76.6701	75.4907	°F	Compressor Inlet Temperature
		G8B\CMHUM	0.0170087	0.0171781	#H/#A	Specific Humidity
		G8BDWATT	139.458	139.831	MW	Generator Watts Max Selected
		G8B CPC	181.689	181.579	psia	Compressor Discharge Press Max Select
		G8B\csgv	68.6946	68.6384	DGA	IGV angle In deg
		G8E WC	2.47828	2.4785	lb se	Water Injection Flow from Feedback
		G8B WXJ	2.11006e+038	2.11025e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8E WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow

85%
Run 3

Low	High
0	1400
0	60
0	100
0	100
0	100
0	100
0	100
0	100
0	100
0	2
0	2

BEST AVAILABLE COPY

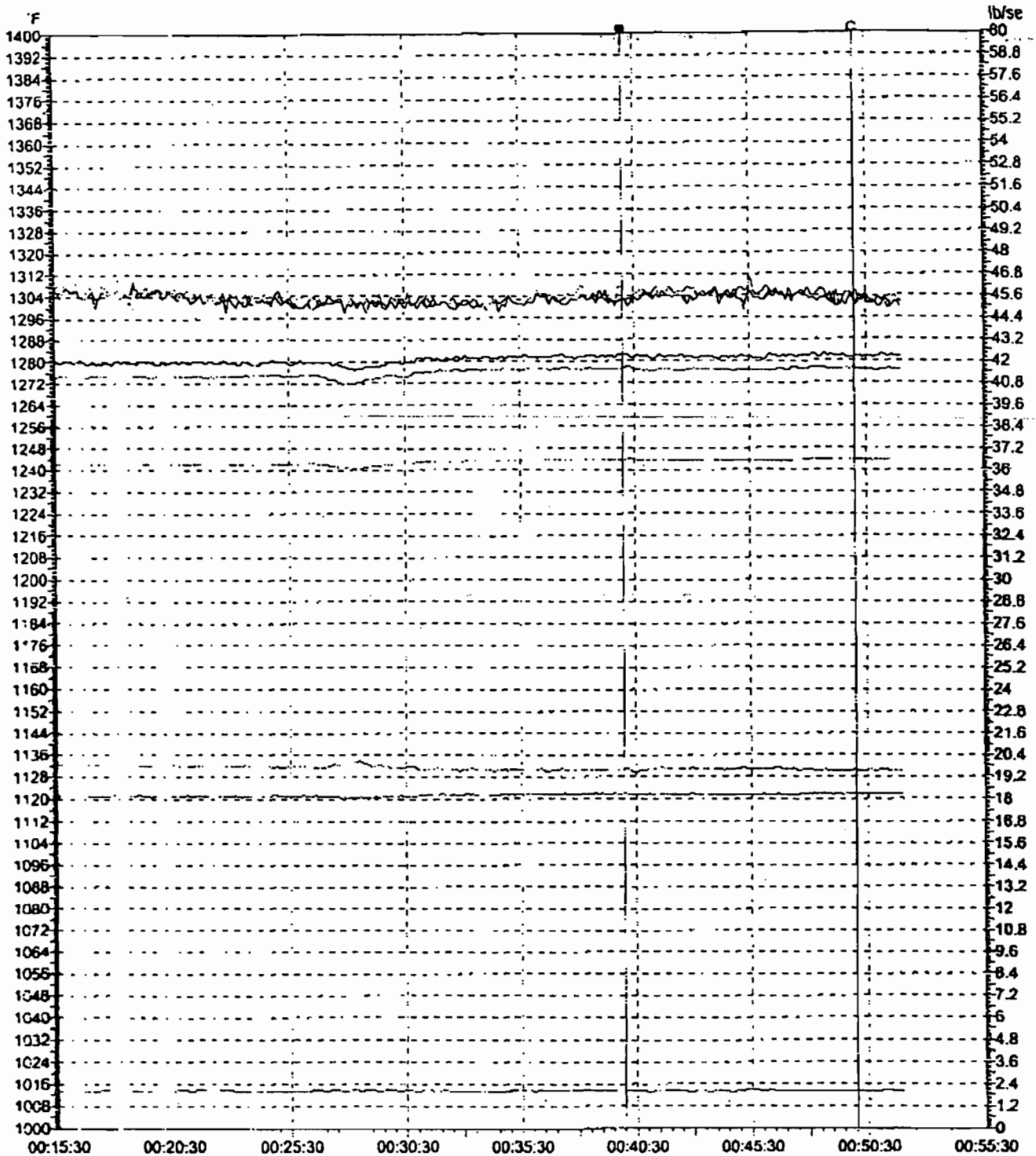
performance.trn - Event 0 of 1 - Printed 05/25/01 12:41:51 AM



Friday, May 25, 2001 12:03:30 AM EDT

Left Cursor 05/25/01 12:30:00 AM.270 - Right Cursor 05/25/01 12:39:59 AM.189 - Difference 598.919 seconds

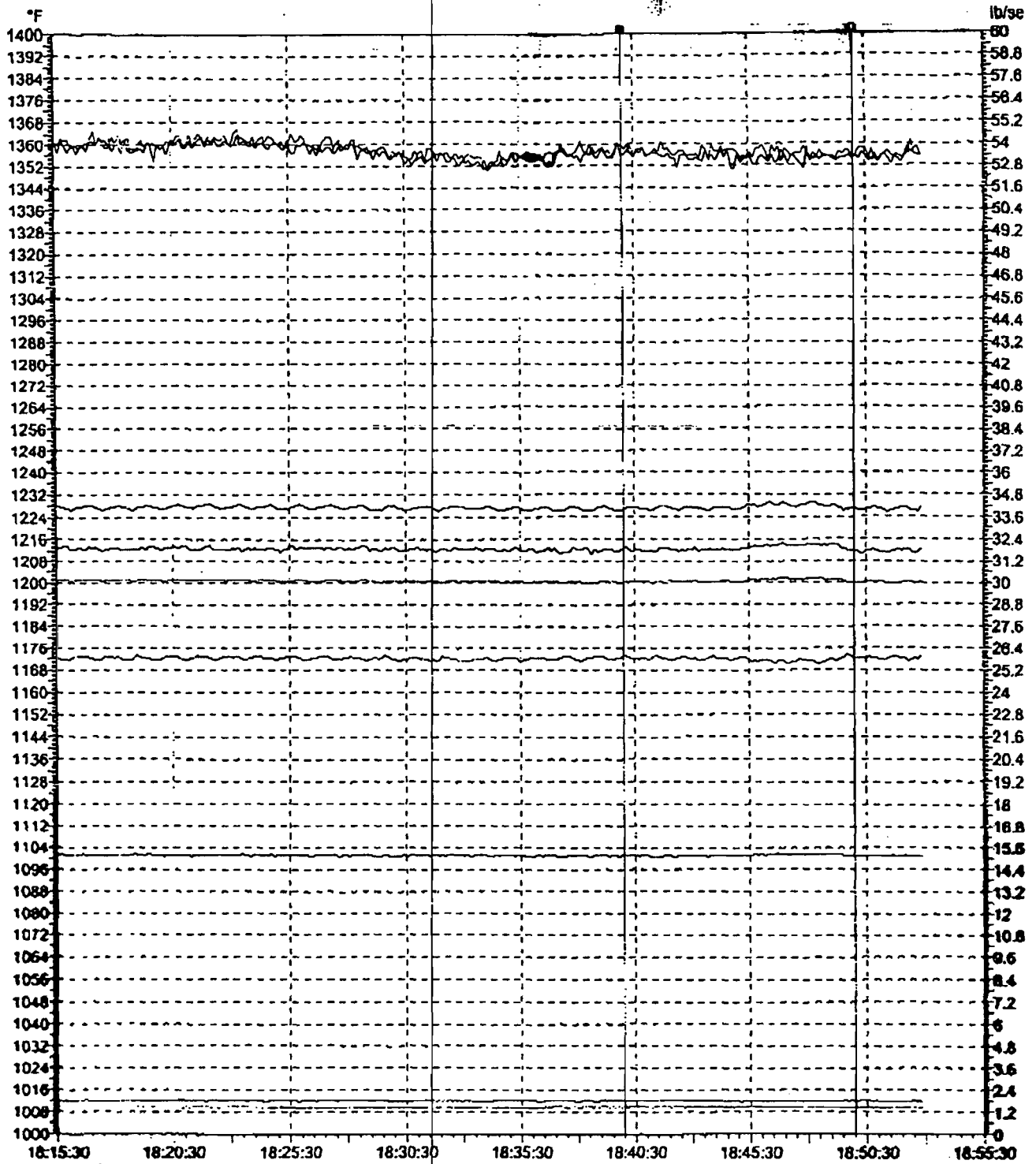
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1131.09	1130.67	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	18.1553	18.3183	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\ctf1a	75.8819	75.5881	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctf1b	75.4663	76.6093	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	75.4663	75.5881	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0171583	0.0170411	#H#A	Specific Humidity	0	0.2
	---	G8B\DWATT	139.832	141.052	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	181.581	182.958	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	68.6401	69.3245	DGA	IGV angle in deg	0	100
	---	G8E\WC	2.47849	2.47978	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.11024e+038	2.11134e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	...
	---	G8E\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	...



Friday, May 25, 2001 12:15:30 AM EDT

Left Cursor 05/25/01 12:39:59 AM.189 - Right Cursor 05/25/01 12:50:00 AM.270 - Difference 601.081 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1130.68	1130.3	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	18.3183	18.2964	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\ctf1a	75.5891	76.2218	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctf1b	76.5992	75.4928	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	75.5891	75.4928	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0170393	0.0165559	#H/#A	Specific Humidity	0	0.6
	---	G8B\DWATT	141.053	140.724	MW	Generator Watts Max Selected	0	0
	---	G8B\CPD	182.956	182.915	psia	Compressor Discharge Press Max Select	0	0
	---	G8B\csgv	69.325	69.306	DGA	IGV angle in deg	0	100
	---	G8B\JG	2.47979	2.47952	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.11135e+038	2.11112e+0...	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2



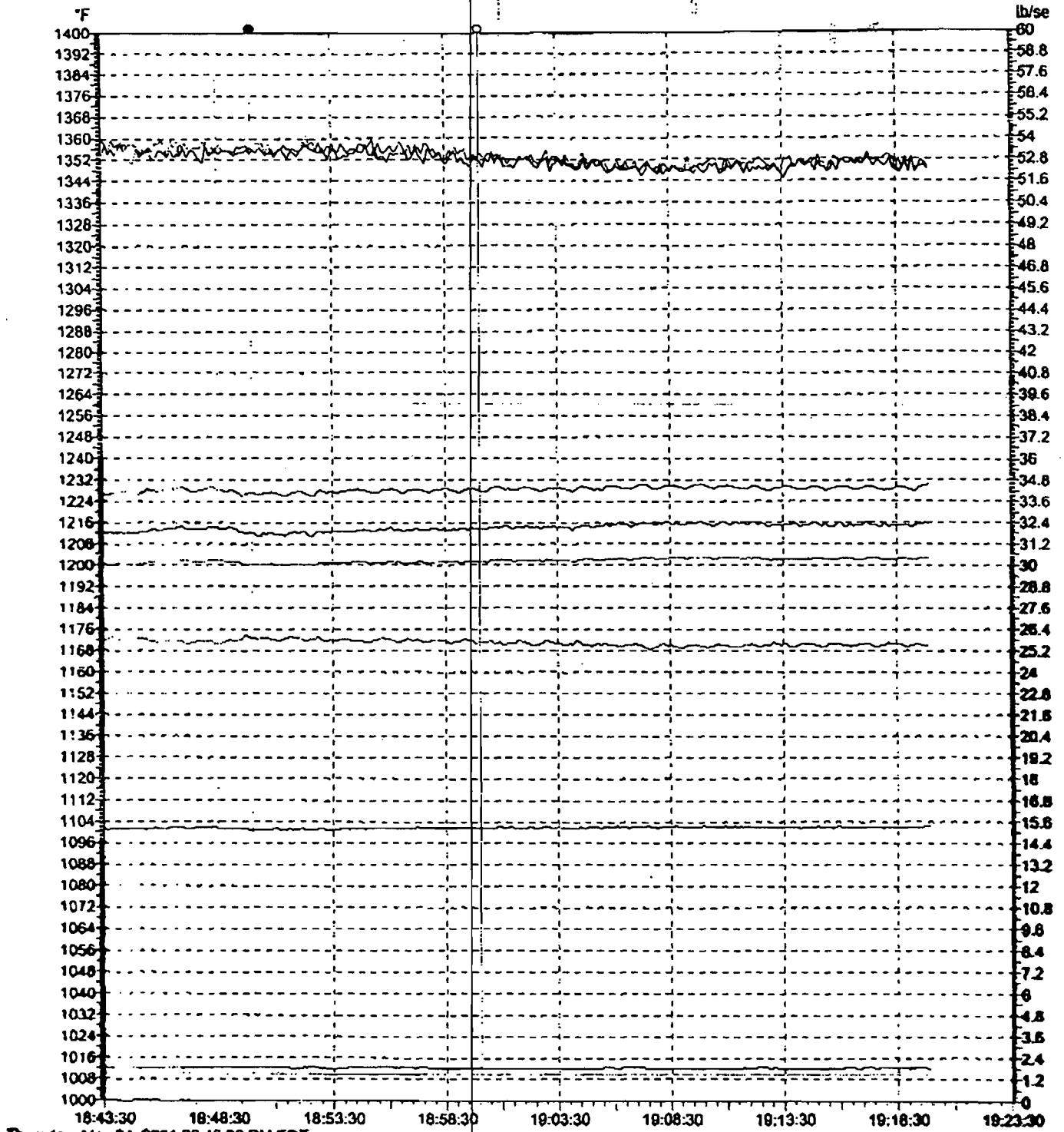
Thursday, May 24, 2001 06:15:30 PM EDT

Left Cursor 05/24/01 06:40:00 PM.270 - Right Cursor 05/24/01 06:50:00 PM.270 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<	---	G88\TTXM	1173.49	1172.73	°F	Exhaust Temp Median Corrected By Average
>	---	G88\FQG	15.2385	15.1615	lb/se	Gas Fuel Flow
	---	G88\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
	---	G88\cti1a	88.9685	89.0638	°F	Compressor Inlet Thermocouple 1A
	---	G88\cti1b	89.8708	88.6827	°F	Compressor Inlet Thermocouple 1B
	---	G88\CTIM	88.9685	88.6741	°F	Compressor Inlet Temperature
	---	G88\CMPHUM	0.0152487	0.0152823	#H/#A	Specific Humidity
	---	G88\OWATT	106.149	105.954	MW	Generator Watts Max Selected
	---	G88\CPD	150.237	150.28	psia	Compressor Discharge Press Max Select
	---	G88\cgv	56.7033	56.7882	DGA	IGV angle In deg
	---	G88\WQ	2.46875	2.46941	lb/se	Water Injection Flow from Feedback
	---	G88\WXJ	2.10195e-038	2.10251e-038	ratio	Ratio of Actual Fuel to NOx Water Flow
	---	G88\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow

8B
Run 1
65%

Low	High
1000	1400
0	60
0	100
0	100
0	100
0	100
0	0.5
0	200
0	300
0	100
0	100
0	2
0	2

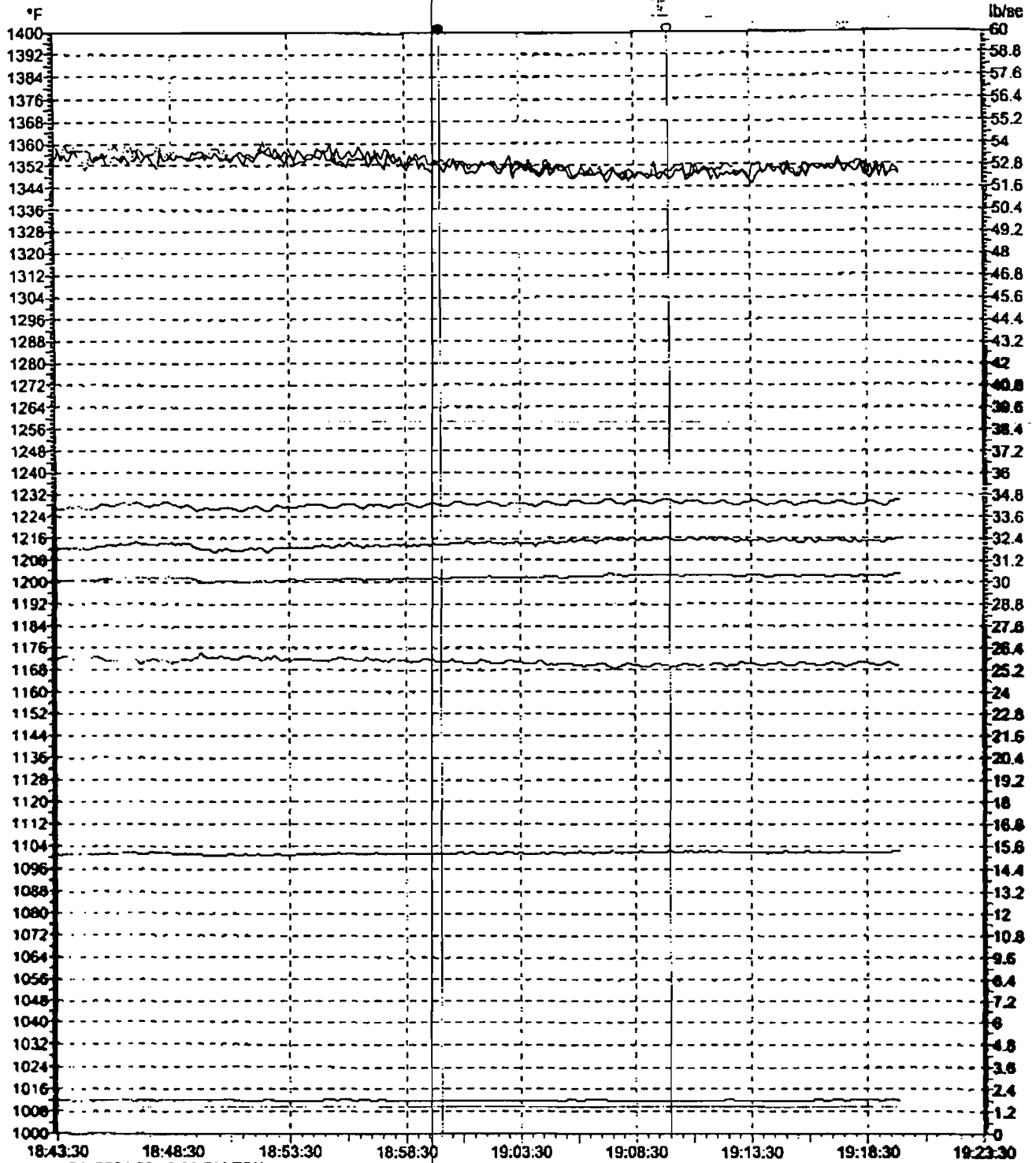


Thursday, May 24, 2001 06:43:30 PM EDT

Left Cursor 05/24/01 06:50:00 PM.270 - Right Cursor 05/24/01 07:00:01 PM.891 - Difference 601.622 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1172.73	1171.15	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	15.1615	15.2197	lb/se	Gas Fuel Flow	0	60
	---	G8B\FOLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\cst1a	89.0654	87.9038	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\cst1b	88.68	88.4764	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	88.6716	87.9176	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMMHUM	0.0152622	0.0153414	#H/#A	Specific Humidity	0	0.5
	---	G8B\DWATT	105.965	106.763	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	150.28	151.071	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	56.7887	57.0259	DGA	IGV angle in deg	0	100
	---	G8B\WQ	2.4694	2.46914	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10251e+038	2.10228e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

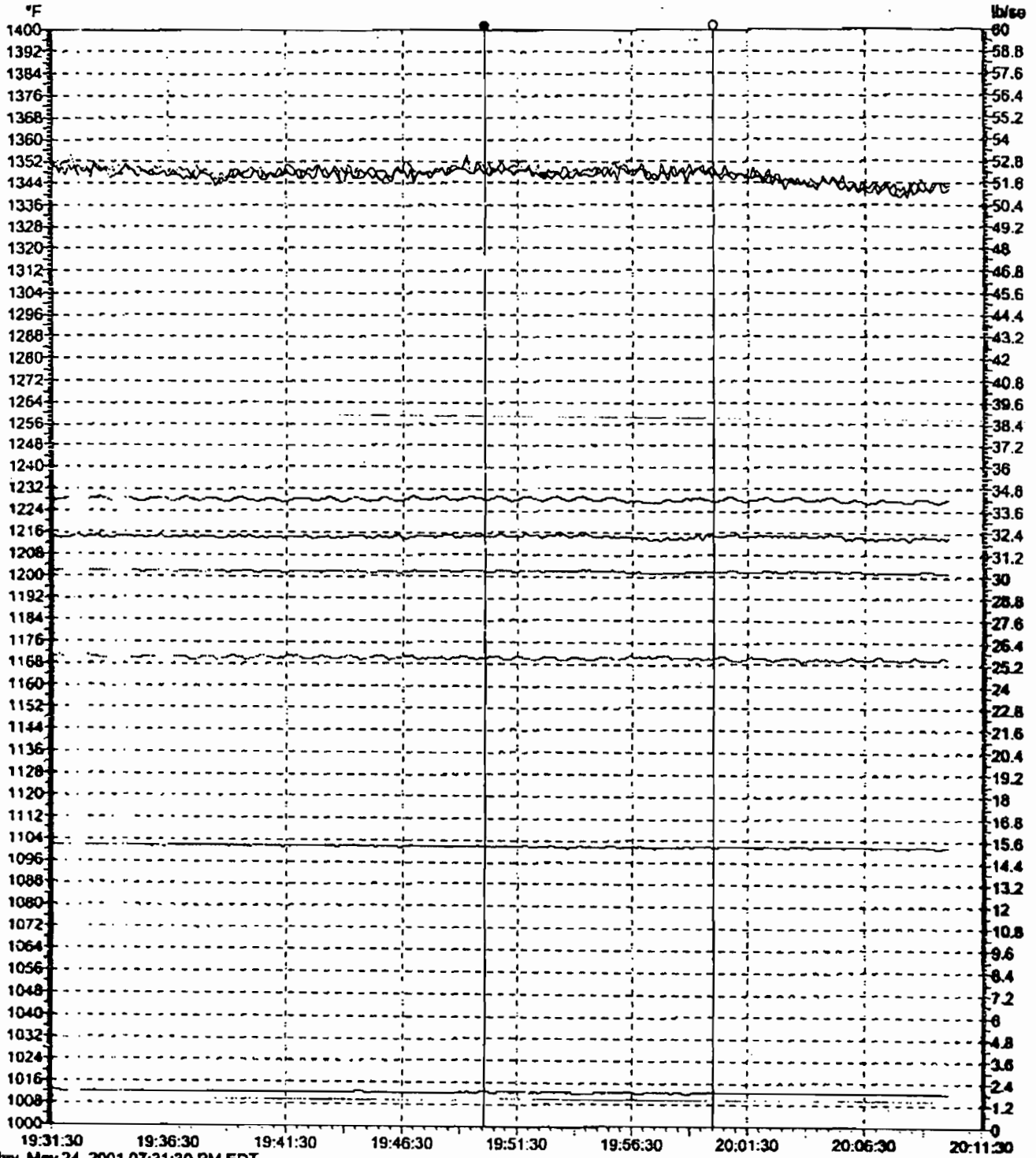
M-32



Thursday, May 24, 2001 06:43:30 PM EDT

Left Cursor 05/24/01 07:00:01 PM.891 - Right Cursor 05/24/01 07:09:59 PM.189 - Difference 597.297 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8BTTXM	1171.15	1169.47	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8BVFG	15.2197	15.3531	lb/se	Gas Fuel Flow	0	60
	---	G8B FOLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B CT1a	87.9038	87.4859	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B CT1b	88.4764	86.8649	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B CTIM	87.9176	86.8849	°F	Compressor Inlet Temperature	0	100
	---	G8B CSHUM	0.0153414	0.0152858	#H/#A	Specific Humidity	0	0.5
	---	G8BDWATT	106.763	107.843	MW	Generator Watts Max Selected	0	200
	---	G8B CPD	151.071	152.205	psia	Compressor Discharge Press Max Select	0	300
	---	G8B CIGV	57.0259	57.549	DGA	IGV angle in deg	0	100
	---	G8B WQ	2.46914	2.46851	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B WXJ	2.10228e+038	2.10174e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2



Thursday, May 24, 2001 07:31:30 PM EDT

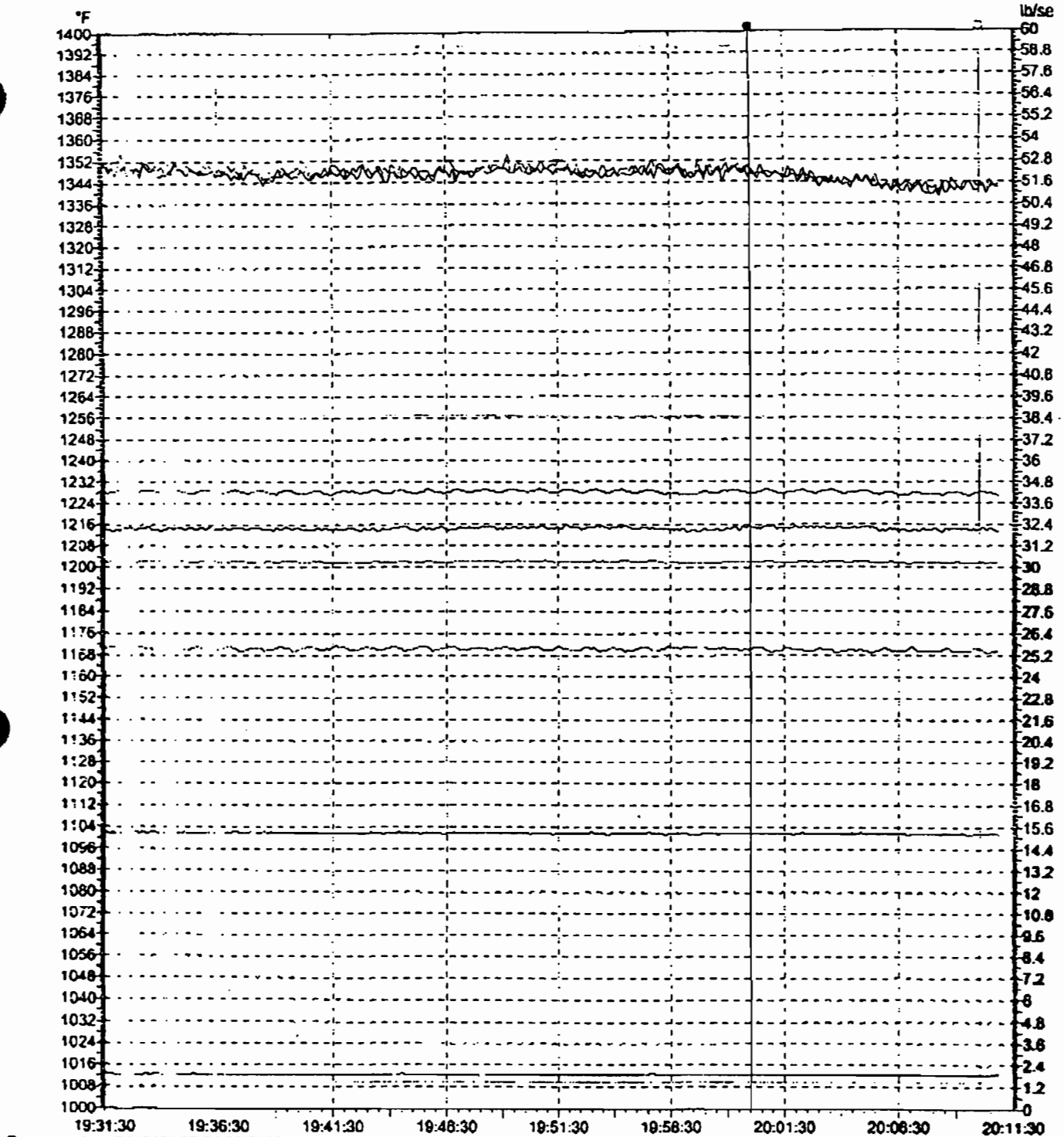
Left Cursor 05/24/01 07:50:03 PM.513 - Right Cursor 05/24/01 08:00:00 PM.810 - Difference 597.297 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<	---	G88\TTXM	1170.28	1170.24	°F	Exhaust Temp Median Corrected By Average
>	---	G88\FQG	15.2721	15.2718	lb/se	Gas Fuel Flow
	---	G88\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
	---	G88\ctf1a	86.9848	87.115	°F	Compressor Inlet Thermocouple 1A
	---	G88\ctf1b	87.1928	86.8789	°F	Compressor Inlet Thermocouple 1B
	---	G88\CTIM	86.9546	86.6225	°F	Compressor Inlet Temperature
	---	G88\CMHUM	0.0158179	0.0156656	#H/#A	Specific Humidity
	---	G88\DWATT	107.306	107.507	MW	Generator Watts Max Selected
	---	G88\CPD	151.455	151.259	psia	Compressor Discharge Press Max Select
	---	G88\csgv	57.0638	56.8761	DGA	IGV angle in deg
	---	G88\WO	2.47066	2.47087	lb:se	Water Injection Flow from Feedback
	---	G88\WXJ	2.10357e+038	2.10375e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
	---	G88\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow

*Run 2
65% Load*

Low	High
1000	1400
0	60
0	100
0	100
0	100
0	100
0	0
0	20
0	300
0	100
0	100
0	2
0	2

m-34

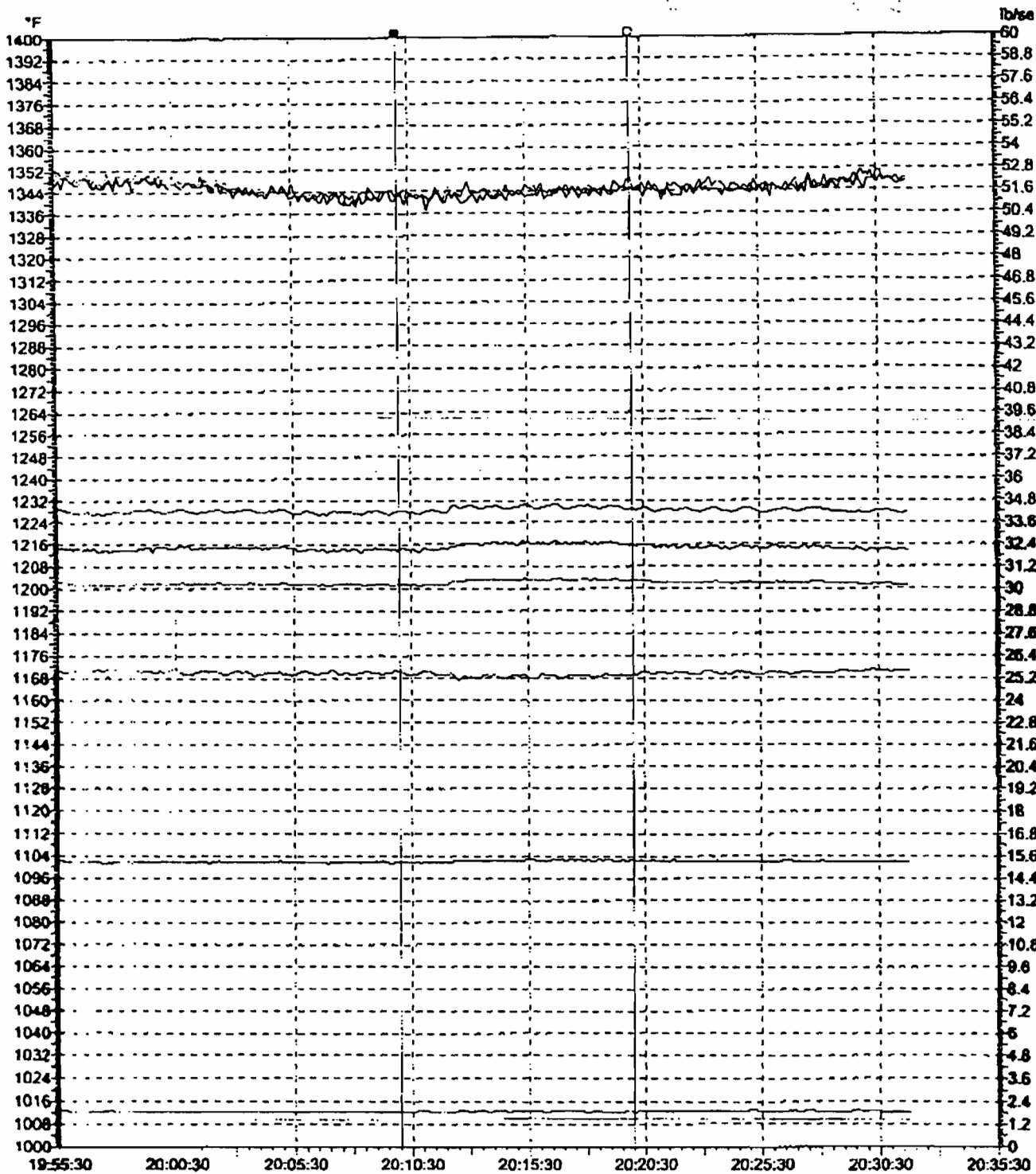


Thursday, May 24, 2001 07:31:30 PM EDT

Left Cursor 05/24/01 08:00:00 PM.810 - Right Cursor 05/24/01 08:10:00 PM.810 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8BTTXM	1170.24	1170.28	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8BFQGG	15.2718	15.2622	lb/se	Gas Fuel Flow	0	60
	---	G8B FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B ctf1a	87.115	85.7371	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B ctf1b	86.8789	85.4486	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B:CTIM	86.6225	85.4486	°F	Compressor Inlet Temperature	0	100
	---	G8B:CMHUM	0.0156656	0.015668	#H/#A	Specific Humidity	0	0.5
	---	G8B:DWATT	107.507	108.989	MW	Generator Watts Max Selected	0	200
	---	G8B CPD	151.259	151.231	psia	Compressor Discharge Press Max Select	0	300
	---	G8B:csgv	56.8761	57.0384	DGA	IGV angle in deg	0	100
	---	G8B :VQ	2.47087	2.4711	lb/se	Water Injection Flow from Feedback	C	100
	---	G8B WXJ	2.10375e+038	2.10396e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

M-35

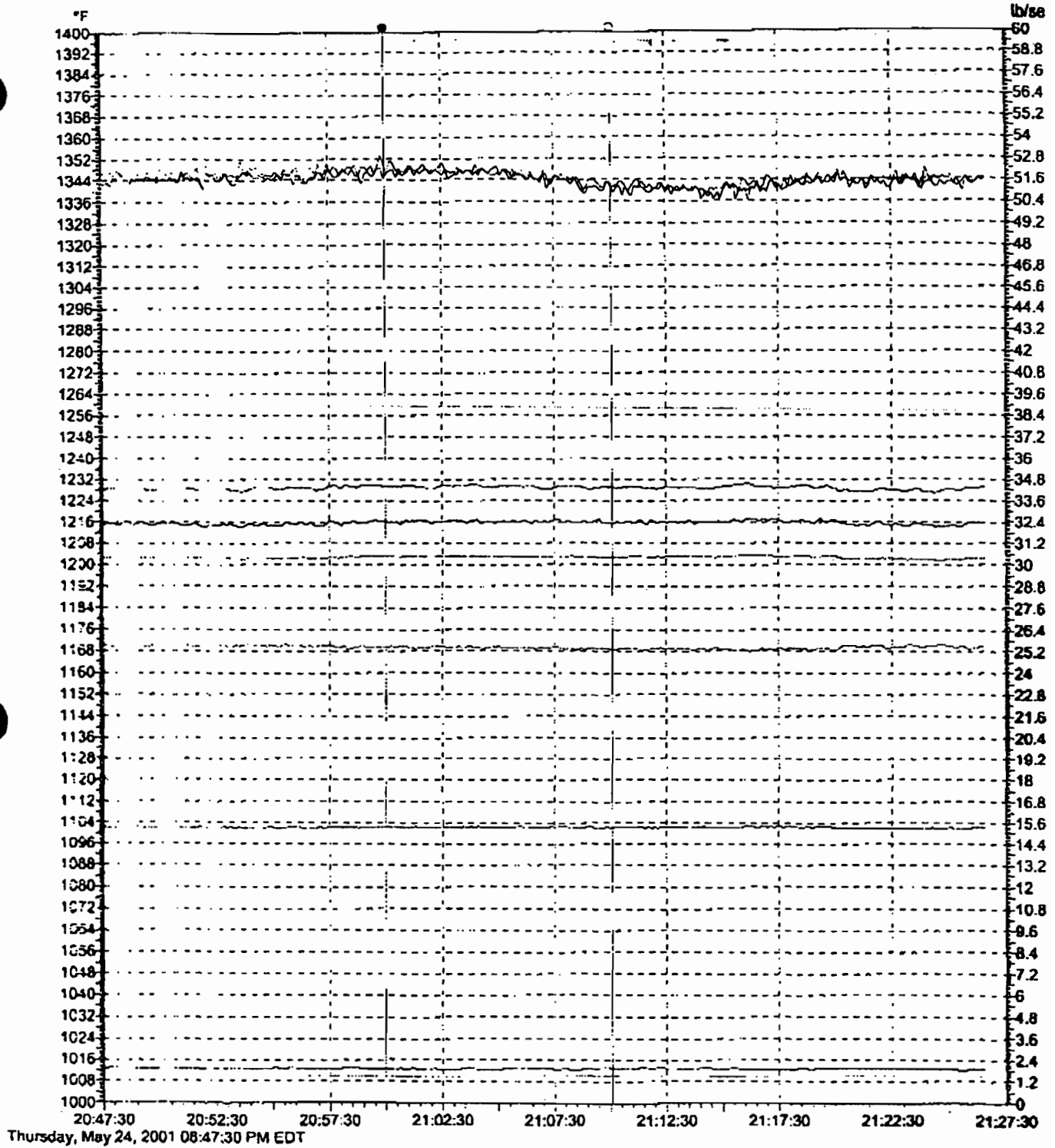


Thursday, May 24, 2001 07:55:30 PM EDT

Left Cursor 05/24/01 08:10:00 PM.810 - Right Cursor 05/24/01 08:20:00 PM.270 - Difference 599.459 seconds

Axes	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1170.29	1169.37	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	15.2832	15.3512	lb/sec	Gas Fuel Flow	0	60
	---	G8B\FQM1	0	0	lb/sec	Liquid Fuel Mass Flow	0	100
	---	G8B\ctf1a	85.7234	87.1044	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctf1b	85.4213	86.1528	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	85.4213	86.1528	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0156573	0.0154342	#H/WA	Specific Humidity	0	0
	---	G8B\DWATT	106.984	107.964	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	151.226	152.126	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\ctgv	57.0364	57.1838	DGA	IGV angle in deg	0	100
	---	G8B\WQ	2.47105	2.47176	lb/sec	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10391e+038	2.10451e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

M-36

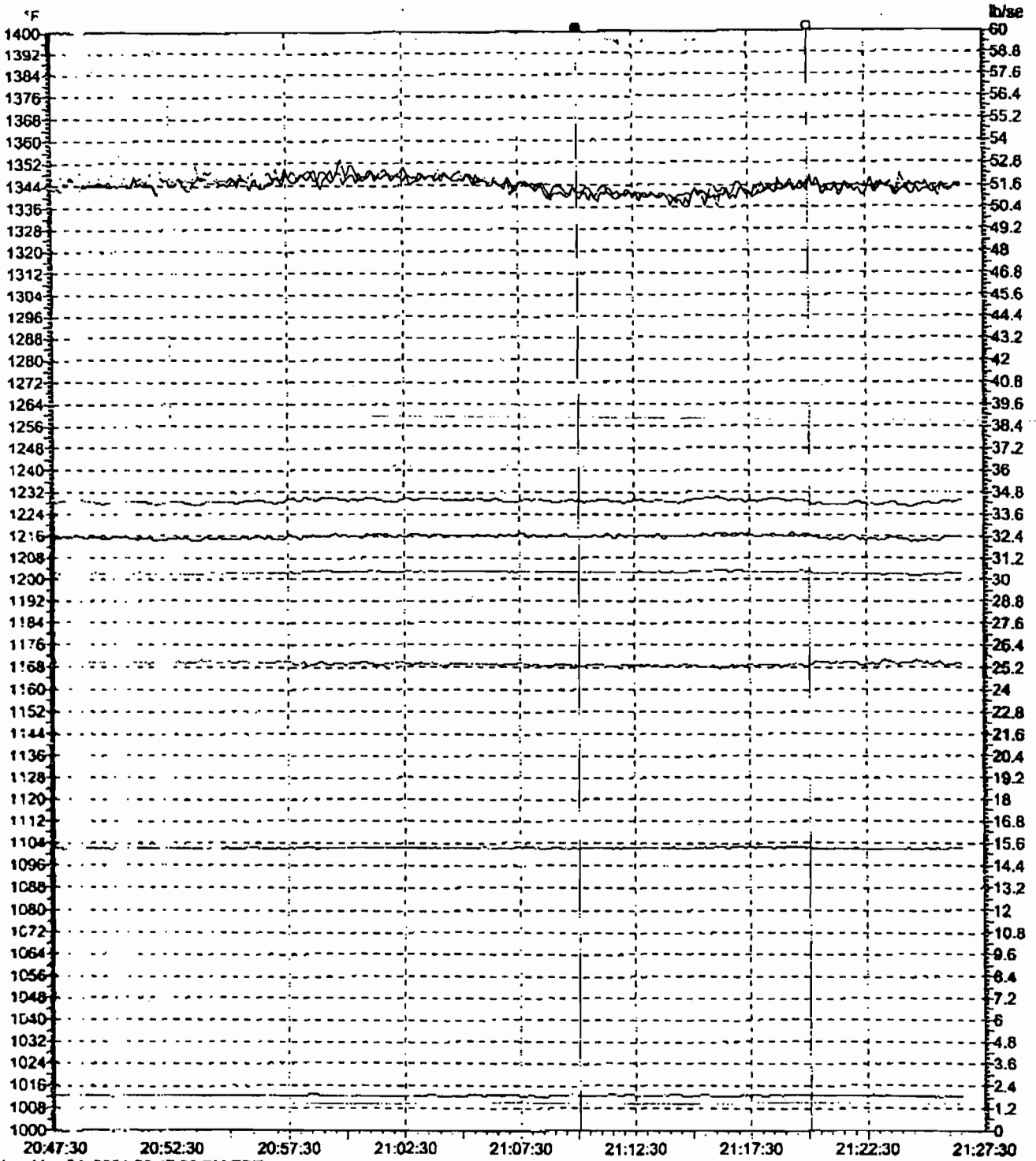


Thursday, May 24, 2001 08:47:30 PM EDT

Left Cursor 05/24/01 08:59:59 PM.189 - Right Cursor 05/24/01 09:10:04 PM.054 - Difference 604.865 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B:TTXM	1169.12	1168.35	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B:FQG	15.3616	15.3172	lb/se	Gas Fuel Flow	0	60
		G8B:FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
		G8B:ctf1a	87.2257	85.2222	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B:ctf1b	86.2971	85.41	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B:CTIM	86.2681	85.2222	°F	Compressor Inlet Temperature	0	100
		G8B:CMHUM	0.0157021	0.0156793	#H/WA	Specific Humidity	0	0.5
		G8B:DWATT	108.143	107.91	MW	Generator Watts Max Selected	0	200
		G8B:CPD	152.322	152.187	psia	Compressor Discharge Press Max Select	0	300
		G8B:csqv	57.2961	57.2739	DGA	IGV angle in deg	0	100
		G8B:WC	2.47212	2.47286	lb-se	Water Injection Flow from Feedback	0	100
		G8B:WX:	2.10481e+038	2.10545e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
		G8B:WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

Rem 3
65%



Thursday, May 24, 2001 08:47:30 PM EDT

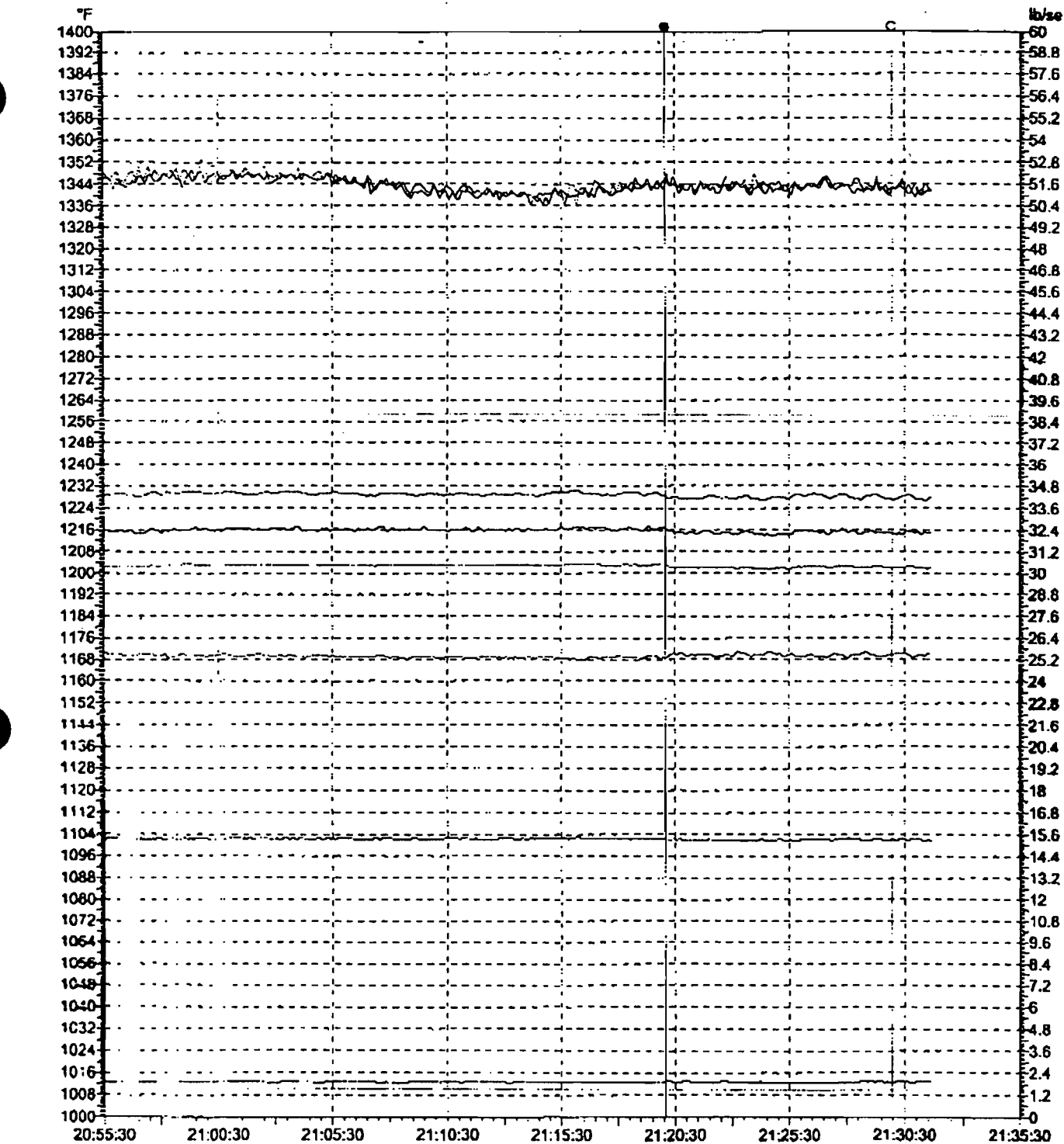
Left Cursor 05/24/01 09:10:04 PM.054 - Right Cursor 05/24/01 09:20:04 PM.054 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1168.35	1168.73	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	15.3172	15.3548	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\cdil1a	85.2222	86.3898	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\cdil1b	85.41	86.0035	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	85.2222	85.8636	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0156793	0.0161058	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	107.91	108.216	MW	Generator Watts Max Selected	0	200
	---	G8B\CPC	152.187	152.25	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\cgv	57.2739	57.0798	DGA	IGV angle in deg	0	100
	---	G8B\WC	2.47286	2.47263	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10545e+038	2.10525e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

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performance - Event 0 of 1 - Printed 05/24/01 09:30:02 PM



Thursday, May 24, 2001 08:55:30 PM EDT

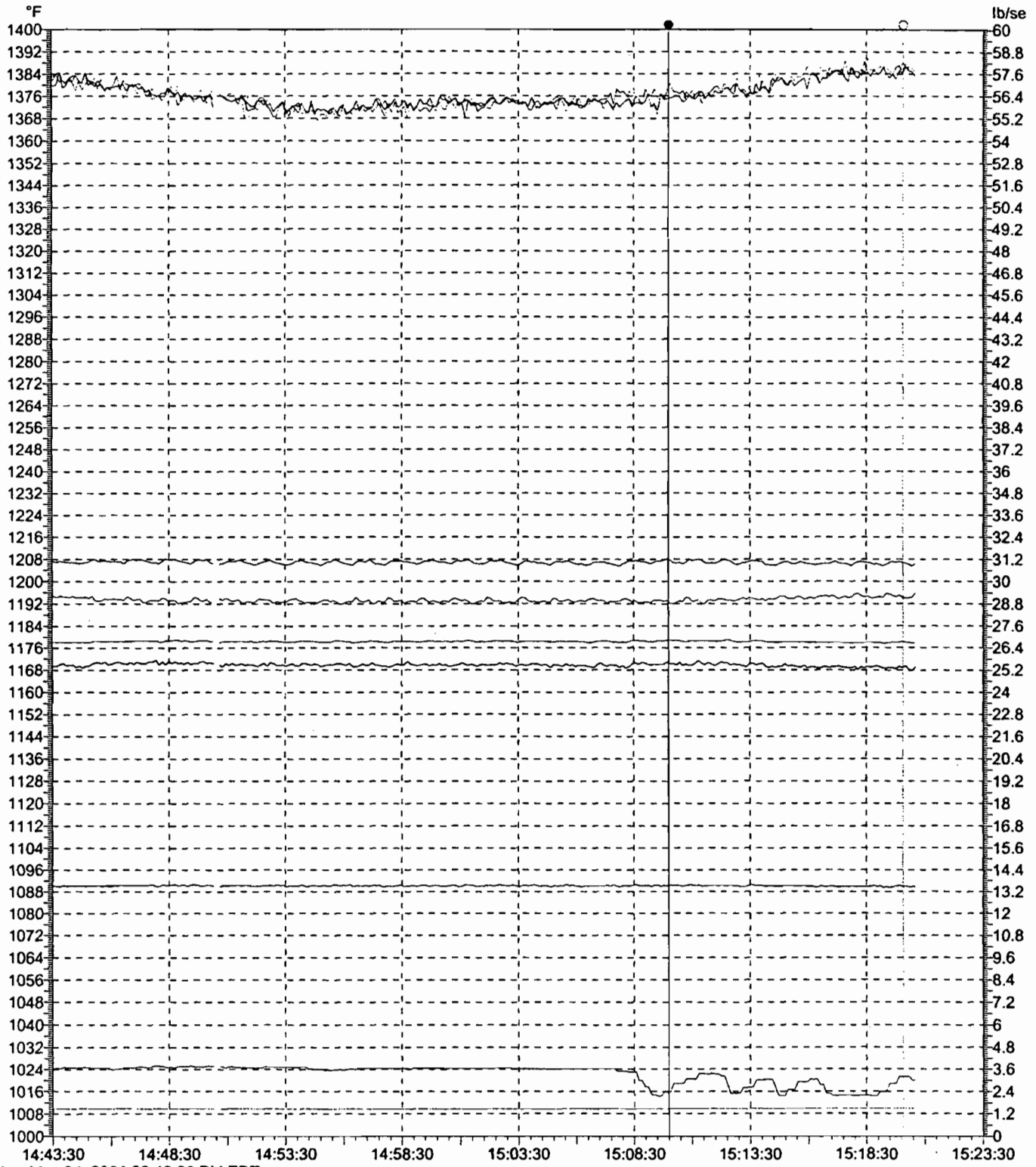
Left Cursor 05/24/01 09:20:04 PM.054 - Right Cursor 05/24/01 09:29:57 PM.567 - Difference 593.514 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1168.72	1169.62	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	15.3562	15.3057	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	100
	---	G8B\ctf1a	86.3761	85.6408	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctf1b	85.9341	85.4684	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	85.8131	85.4562	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0161053	0.0156754	#H/#A	Specific Humidity	0	0.5
	---	G8B\DWATT	108.227	107.398	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	152.265	151.467	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	57.0908	56.7709	DGA	IGV angle in deg	0	100
	---	G8B\WJ	2.47262	2.4732	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10524e+038	2.10574e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	2
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	2

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performance.tm - Event 0 of 1 - Printed 05/24/01 03:21:51 PM

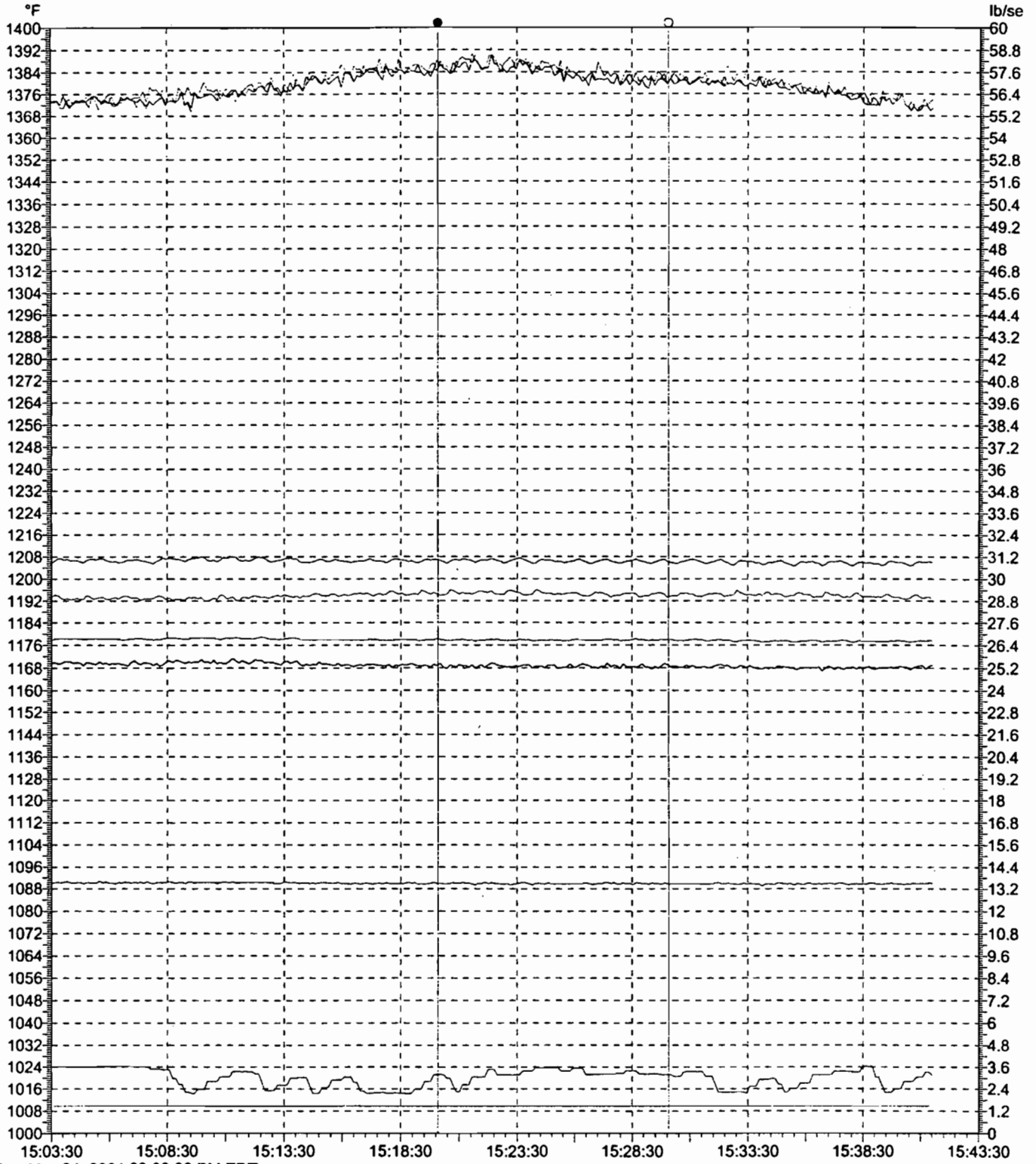


Thursday, May 24, 2001 02:43:30 PM EDT

Left Cursor 05/24/01 03:09:59 PM.729 - Right Cursor 05/24/01 03:20:04 PM.594 - Difference 604.865 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	—	G8B\TTXM	1192.8	1194.36	°F	Exhaust Temp Median Corrected By Average	1000	140
>	—	G8B\FQG	13.528	13.4717	lb/se	Gas Fuel Flow	0	6
	—	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	—	G8B\ctif1a	94.7695	96.2452	°F	Compressor Inlet Thermocouple 1A	0	10
	—	G8B\ctif1b	93.7601	96.994	°F	Compressor Inlet Thermocouple 1B	0	10
	—	G8B\CTIM	93.7601	96.1848	°F	Compressor Inlet Temperature	0	10
	—	G8B\CMHUM	0.0198863	0.0265272	#H/#A	Specific Humidity	0	0
	—	G8B\DWATT	85.283	84.4257	MW	Generator Watts Max Selected	0	20
	—	G8B\CPD	134.111	133.664	psia	Compressor Discharge Press Max Select	0	30
	—	G8B\csgv	51.9733	51.7106	DGA	IGV angle in deg	0	10
	—	G8B\WQ	2.46477	2.4657	lb/se	Water Injection Flow from Feedback	0	10
	—	G8B\WXJ	2.09856e+0...	2.09935e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	—	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0

50% Load
Run



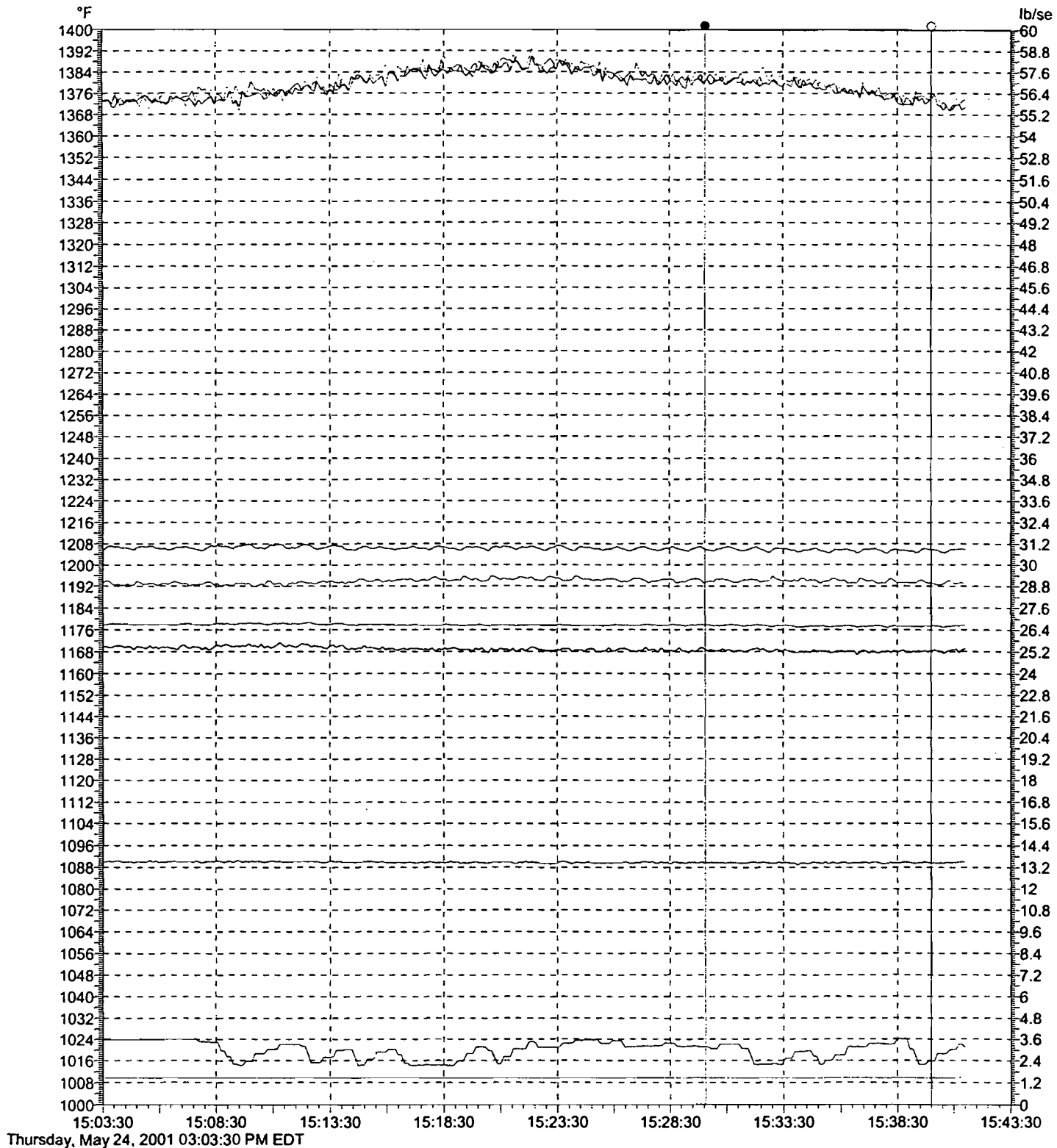
Thursday, May 24, 2001 03:03:30 PM EDT

Left Cursor 05/24/01 03:20:04 PM.594 - Right Cursor 05/24/01 03:30:04 PM.594 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	---	G8BVTXXM	1194.35	1193.44	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8BVFQG	13.4721	13.4543	lb/se	Gas Fuel Flow	0	60
	---	G8BVFQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8Bvctif1a	96.2785	95.0537	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8Bvctif1b	96.9762	95.9239	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8Bvctim	96.2046	95.0537	°F	Compressor Inlet Temperature	0	100
	---	G8Bvcmhum	0.0265272	0.0265573	#H/#A	Specific Humidity	0	0
	---	G8BIDWATT	84.4412	84.4345	MW	Generator Watts Max Selected	0	200
	---	G8Bvcpd	133.661	133.55	psia	Compressor Discharge Press Max Select	0	300
	---	G8Bvcsgv	51.7075	51.5296	DGA	IGV angle in deg	0	100
	---	G8BvWQ	2.46564	2.46592	lb/se	Water Injection Flow from Feedback	0	100
	---	G8BvWXJ	2.0993e+038	2.09954e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	---	G8BvWYC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0

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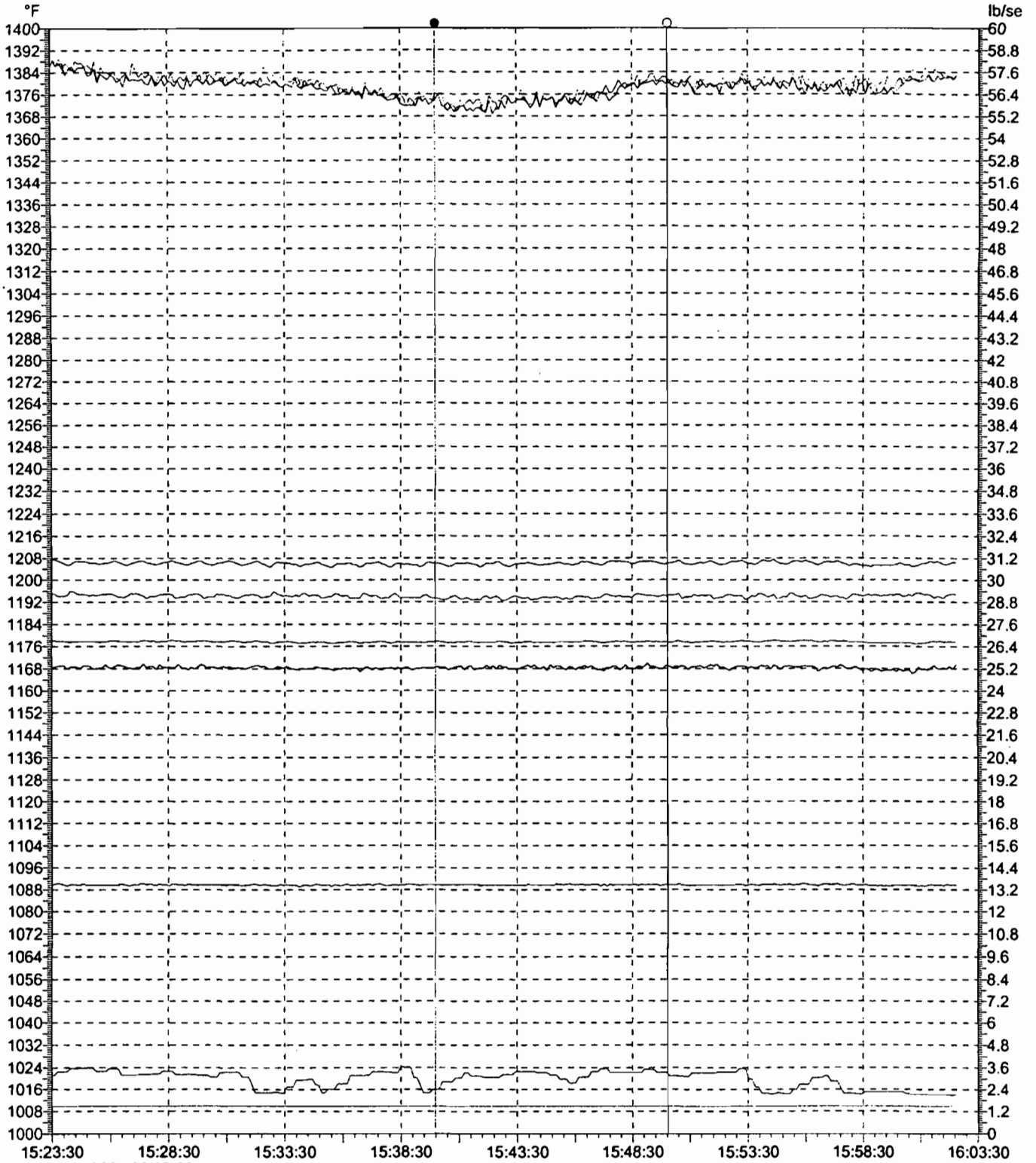
performance.trn - Event 0 of 1 - Printed 05/24/01 03:43:17 PM



Thursday, May 24, 2001 03:03:30 PM EDT

Left Cursor 05/24/01 03:30:04 PM.594 - Right Cursor 05/24/01 03:39:59 PM.189 - Difference 594.595 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	---	G8B\TTXM	1193.44	1193.49	°F	Exhaust Temp Median Corrected By Average	1000	14C
>	---	G8B\FQG	13.4543	13.4632	lb/se	Gas Fuel Flow	0	6
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	1C
	---	G8B\ctif1a	95.0537	93.9771	°F	Compressor Inlet Thermocouple 1A	0	10
	---	G8B\ctif1b	95.9239	93.5085	°F	Compressor Inlet Thermocouple 1B	0	10
	---	G8B\CTIM	95.0537	93.4895	°F	Compressor Inlet Temperature	0	10
	---	G8B\CMHUM	0.0265573	0.0200189	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	84.4345	84.1881	MW	Generator Watts Max Selected	0	20
	---	G8B\CPD	133.55	133.373	psia	Compressor Discharge Press Max Select	0	3C
	---	G8B\csgv	51.5296	51.5154	DGA	IGV angle in deg	0	10
	---	G8B\WQ	2.46592	2.46685	lb/se	Water Injection Flow from Feedback	0	10
	---	G8B\WXJ	2.09954e+0...	2.10033e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0



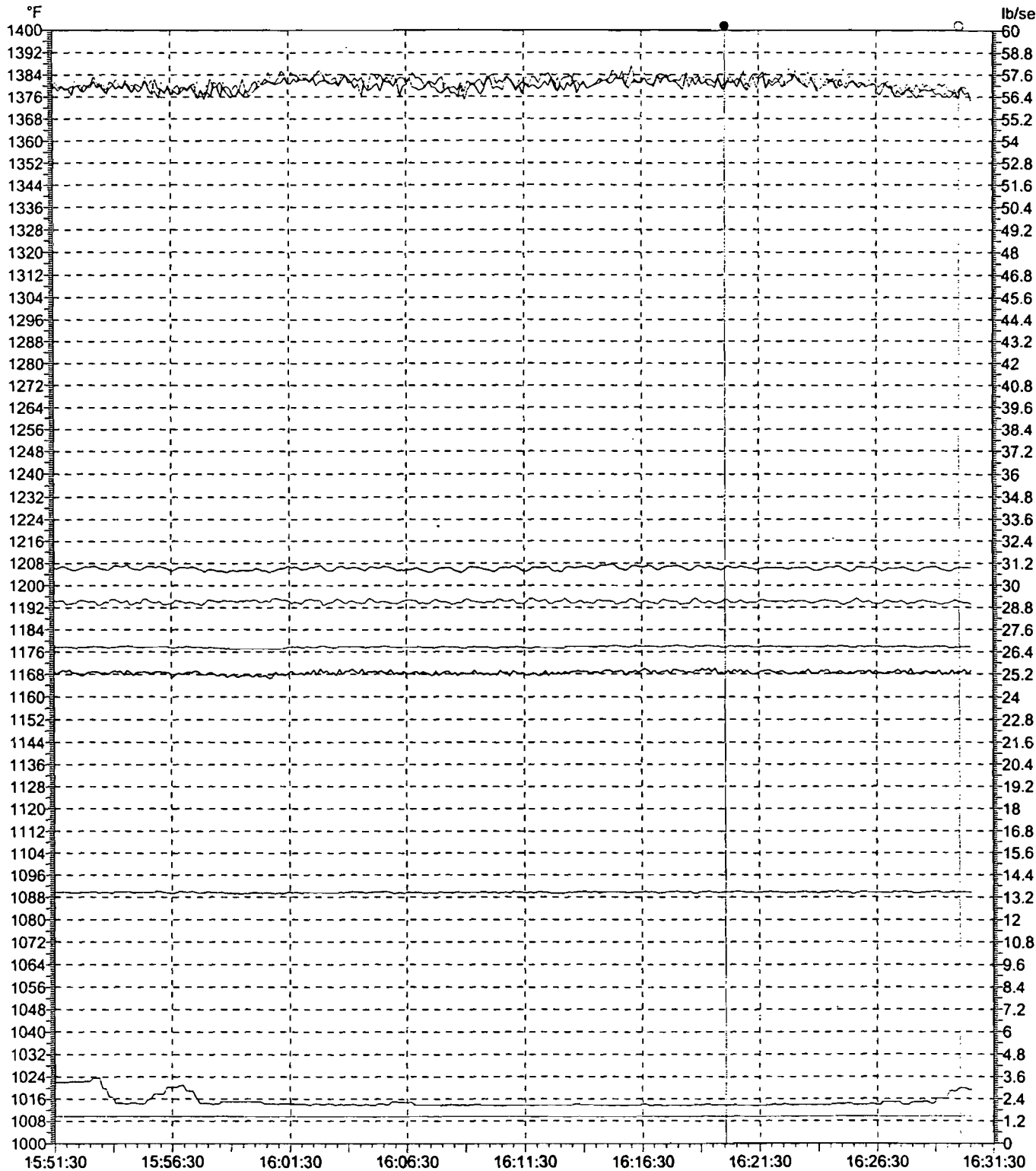
Thursday, May 24, 2001 03:23:30 PM EDT

Left Cursor 05/24/01 03:39:59 PM.189 - Right Cursor 05/24/01 03:50:01 PM.891 - Difference 602.703 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1193.48	1194.31	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	13.4634	13.4768	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8B\ctif1a	93.9475	95.3376	°F	Compressor Inlet Thermocouple 1A	0	10
	---	G8B\ctif1b	93.507	95.0563	°F	Compressor Inlet Thermocouple 1B	0	10
	---	G8B\CTIM	93.4807	94.9142	°F	Compressor Inlet Temperature	0	10
	---	G8B\CMHUM	0.0200187	0.0271946	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	84.1819	84.4984	MW	Generator Watts Max Selected	0	20
	---	G8B\CPD	133.364	133.241	psia	Compressor Discharge Press Max Select	0	30
	---	G8B\csgv	51.516	51.4766	DGA	IGV angle in deg	0	10
	---	G8B\WQ	2.46685	2.46786	lb/se	Water Injection Flow from Feedback	0	10
	---	G8B\WXJ	2.10033e+038	2.10119e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
	---	G8B\WVC	0	0	ratio	Ratio of Computed Fuel to NOx Water Flow	0	0

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performance.fm - Event 0 of 1 - Printed 05/24/01 04:32:04 PM



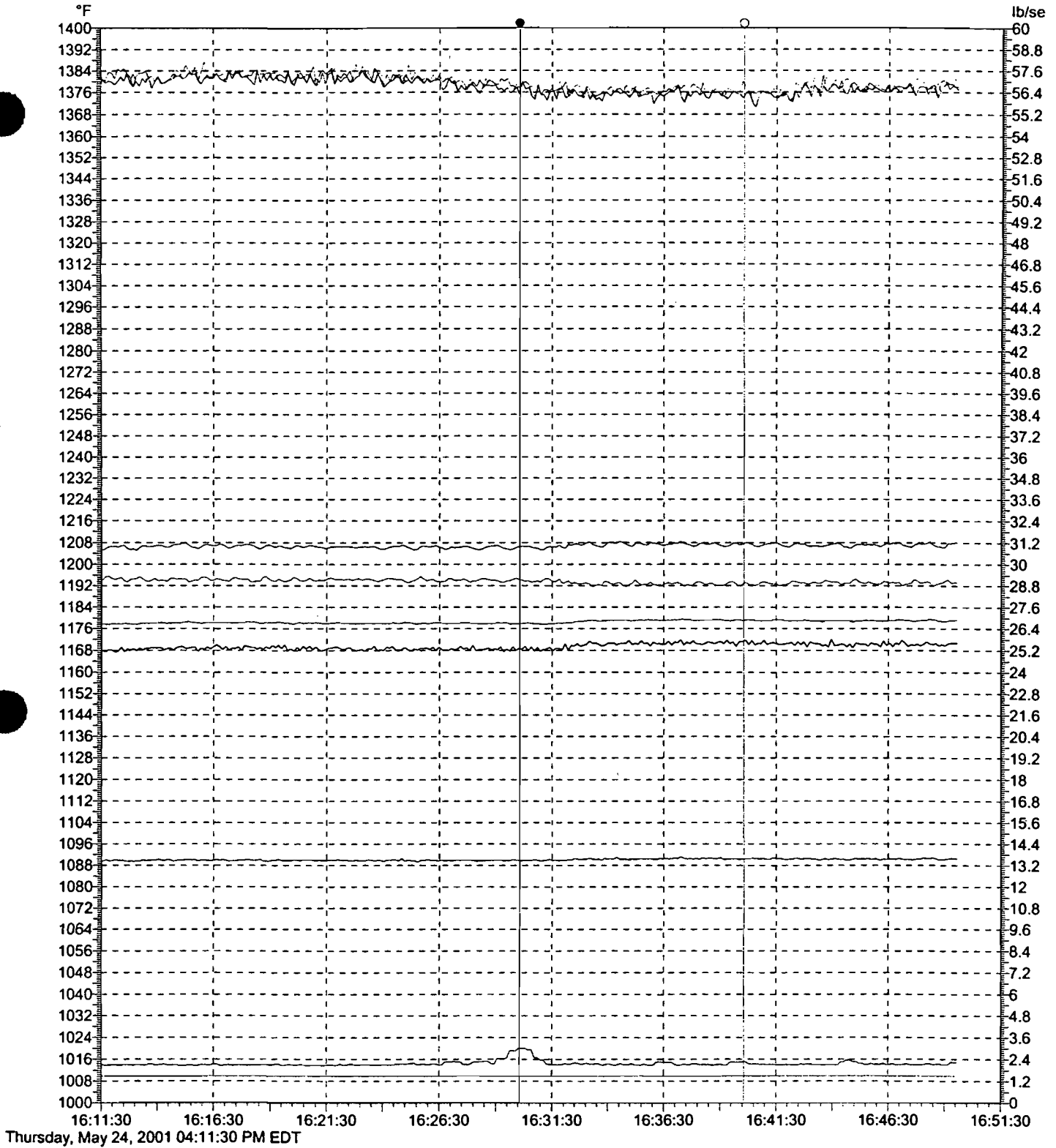
Thursday, May 24, 2001 03:51:30 PM EDT

Left Cursor 05/24/01 04:20:03 PM.513 - Right Cursor 05/24/01 04:30:03 PM.513 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8B\TTXM	1195.19	1194.17	°F	Exhaust Temp Median Corrected By Average
>		G8B\FQG	13.5049	13.4749	lb/se	Gas Fuel Flow
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8B\ctif1a	95.2074	94.5504	°F	Compressor Inlet Thermocouple 1A
		G8B\ctif1b	94.7308	94.1234	°F	Compressor Inlet Thermocouple 1B
		G8B\CTIM	94.7024	94.0716	°F	Compressor Inlet Temperature
		G8B\CMHUM	0.0173394	0.0250281	#H/#A	Specific Humidity
		G8B\DWATT	83.9569	84.3367	MW	Generator Watts Max Selected
		G8B\CPD	133.248	133.302	psia	Compressor Discharge Press Max Select
		G8B\csgv	51.6242	51.6255	DGA	IGV angle in deg
		G8B\WQ	2.46855	2.46723	lb/se	Water Injection Flow from Feedback
		G8B\WXJ	2.10178e+038	2.10065e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow

50% Load
Run

Low Hig
1000 1400
0 60
0 10
0 10
0 0
0 20
0 30
0 10
0 10
0
C



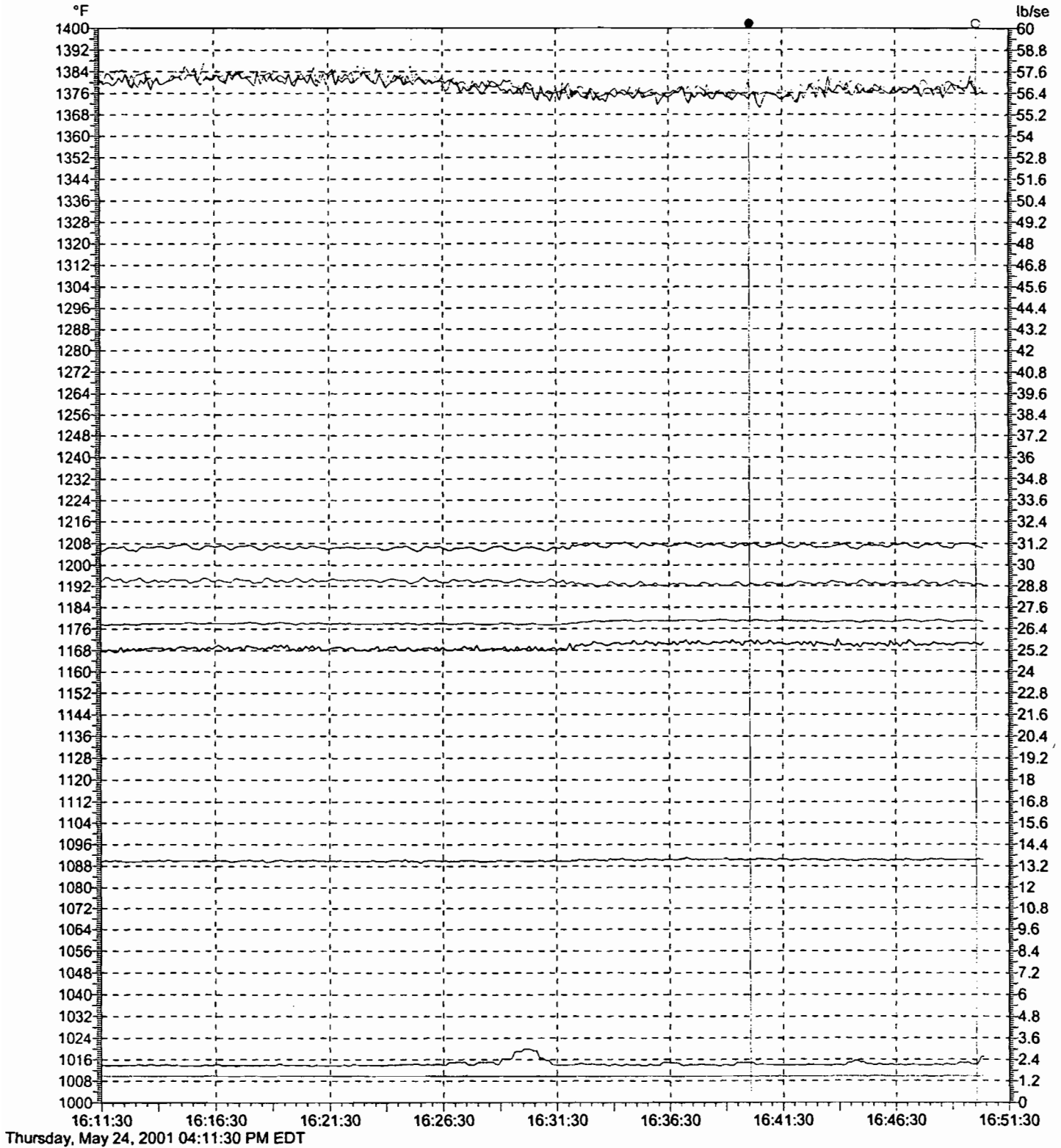
Thursday, May 24, 2001 04:11:30 PM EDT

Left Cursor 05/24/01 04:30:03 PM.513 - Right Cursor 05/24/01 04:40:03 PM.513 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	Hig
<	1	G8B\TTXM	1194.18	1192.77	°F	Exhaust Temp Median Corrected By Average	1000	140
>	2	G8B\FQG	13.4751	13.5665	lb/se	Gas Fuel Flow	0	6
	3	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	4	G8B\ctif1a	94.5367	93.6239	°F	Compressor Inlet Thermocouple 1A	0	10
	5	G8B\ctif1b	94.0771	94.7016	°F	Compressor Inlet Thermocouple 1B	0	10
	6	G8B\CTIM	94.0327	93.6239	°F	Compressor Inlet Temperature	0	10
	7	G8B\CMHUM	0.0250297	0.0187963	#H/#A	Specific Humidity	0	0.
	8	G8B\DWATT	84.3431	85.7354	MW	Generator Watts Max Selected	0	20
	9	G8B\CPD	133.297	134.263	psia	Compressor Discharge Press Max Select	0	30
	10	G8B\csgv	51.6237	51.8987	DGA	IGV angle in deg	0	10
	11	G8B\WQ	2.46725	2.46923	lb/se	Water Injection Flow from Feedback	0	10
	12	G8B\WXJ	2.10067e+038	2.10236e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	
	13	G8B\WXC			ratio	Ratio of Required Fuel to NOx Water Flow	0	

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performance.tn - Event 0 of 1 - Printed 05/24/01 04:51:41 PM



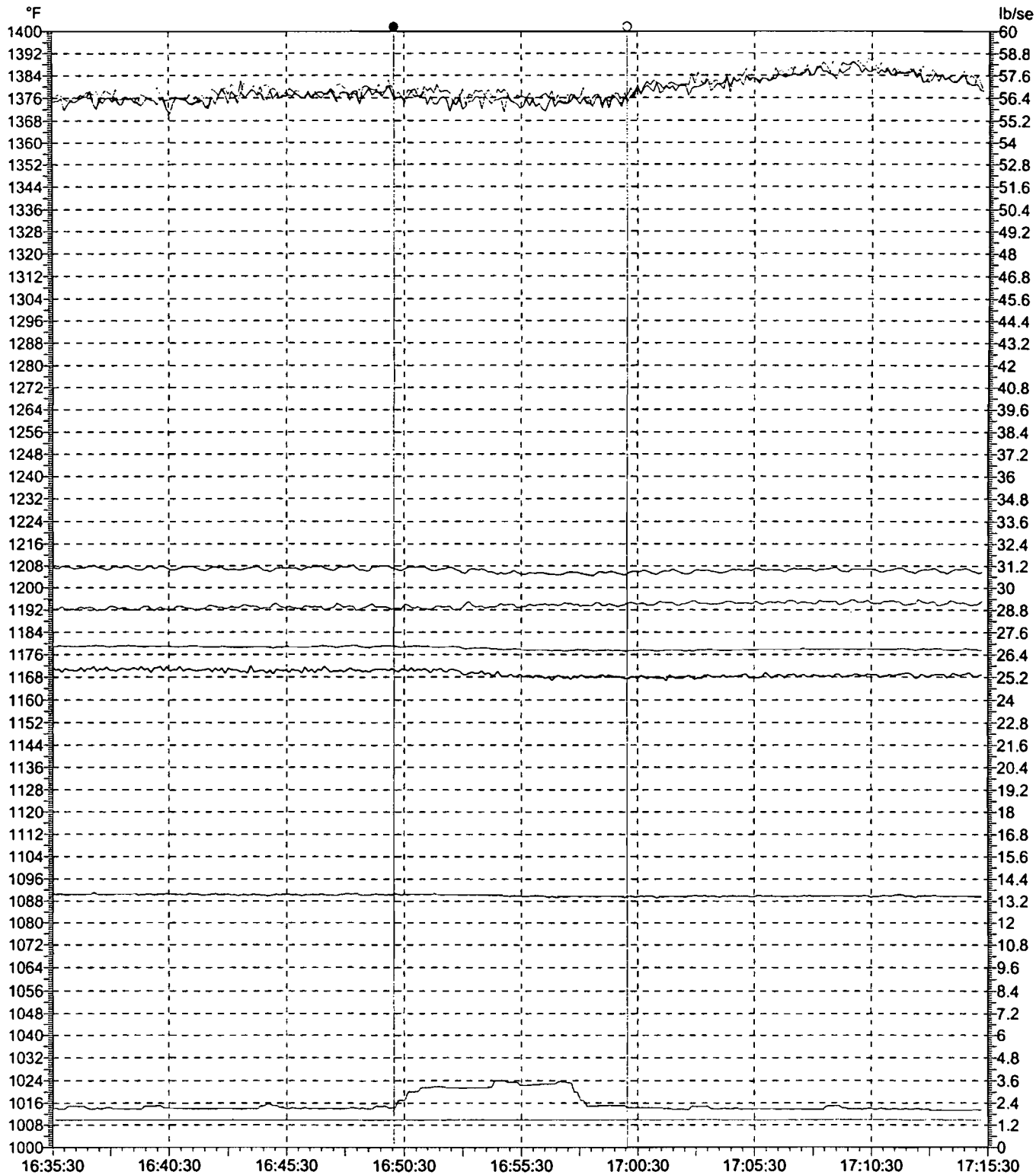
Thursday, May 24, 2001 04:11:30 PM EDT

Left Cursor 05/24/01 04:40:03 PM.513 - Right Cursor 05/24/01 04:50:03 PM.513 - Difference 600 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1192.77	1192.55	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	13.5665	13.5843	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8B\ctif1a	93.6239	94.3177	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctif1b	94.7016	94.2381	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	93.6239	94.0581	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0187963	0.0178631	#H/#A	Specific Humidity	0	100
	---	G8B\DWATT	85.7354	85.3294	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	134.263	134.366	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	51.8987	51.7782	DGA	IGV angle in deg	0	100
	---	G8B\WQ	2.46923	2.46841	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10236e+038	2.10166e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	100
	---	G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	100

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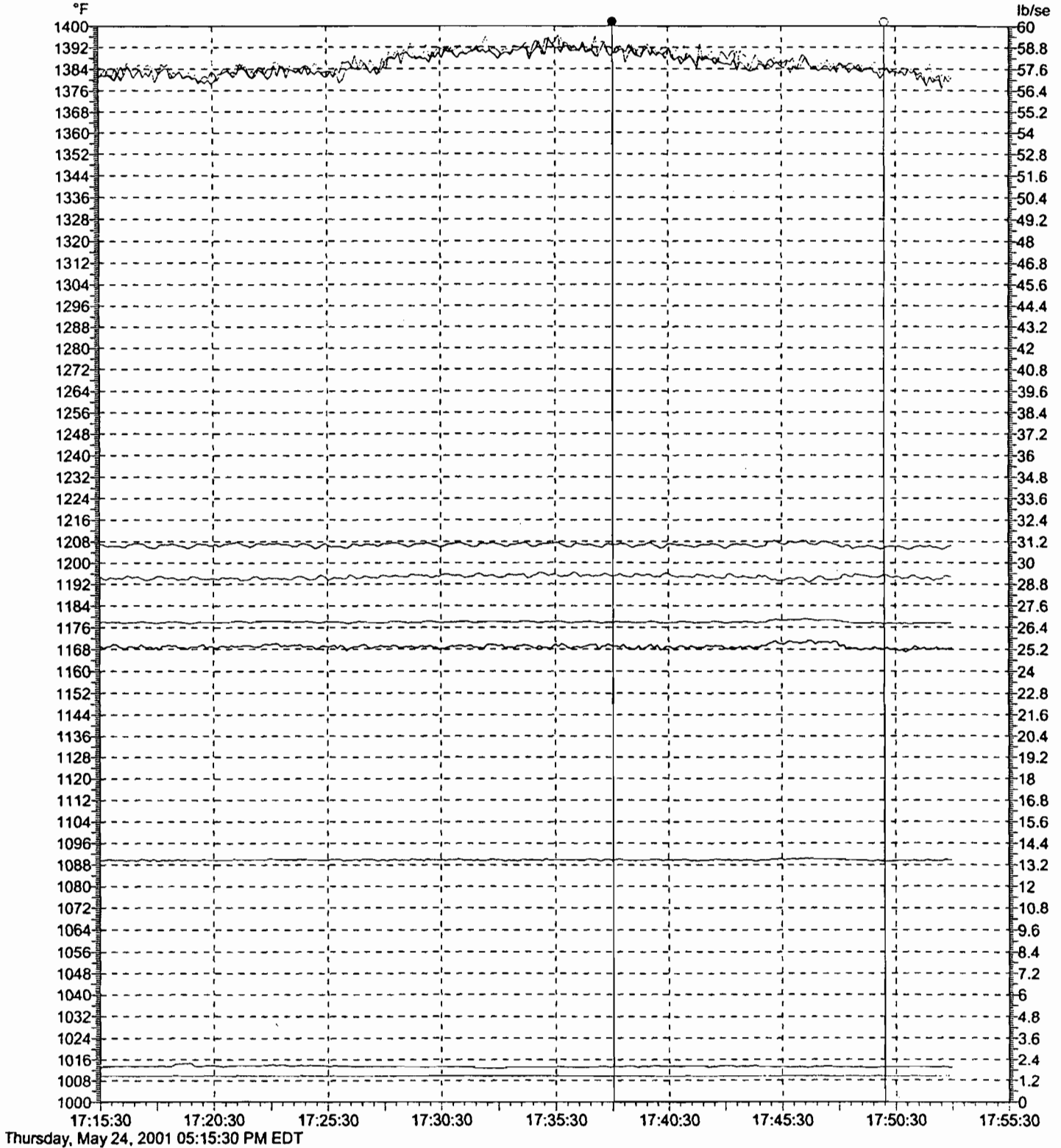
performance.trn - Event 0 of 1 - Printed 05/24/01 05:16:37 PM



Thursday, May 24, 2001 04:35:30 PM EDT

Left Cursor 05/24/01 04:50:03 PM.513 - Right Cursor 05/24/01 05:00:02 PM.972 - Difference 599.459 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<	---	G8B\TTXM	1192.55	1194.27	°F	Exhaust Temp Median Corrected By Average	1000	1400
>	---	G8B\FQG	13.5855	13.4429	lb/se	Gas Fuel Flow	0	60
	---	G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
	---	G8B\ctif1a	94.2986	94.1878	°F	Compressor Inlet Thermocouple 1A	0	100
	---	G8B\ctif1b	94.2339	93.8753	°F	Compressor Inlet Thermocouple 1B	0	100
	---	G8B\CTIM	94.0493	93.7634	°F	Compressor Inlet Temperature	0	100
	---	G8B\CMHUM	0.0178632	0.0181308	#H/#A	Specific Humidity	0	0
	---	G8B\DWATT	85.3236	83.6613	MW	Generator Watts Max Selected	0	200
	---	G8B\CPD	134.367	132.987	psia	Compressor Discharge Press Max Select	0	300
	---	G8B\csgv	51.7767	51.2825	DGA	IGV angle in deg	0	100
	---	G8B\WQ	2.46838	2.46897	lb/se	Water Injection Flow from Feedback	0	100
	---	G8B\WXJ	2.10163e+038	2.10213e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0



Thursday, May 24, 2001 05:15:30 PM EDT

Left Cursor 05/24/01 05:38:01 PM.351 - Right Cursor 05/24/01 05:50:00 PM.270 - Difference 718.919 seconds

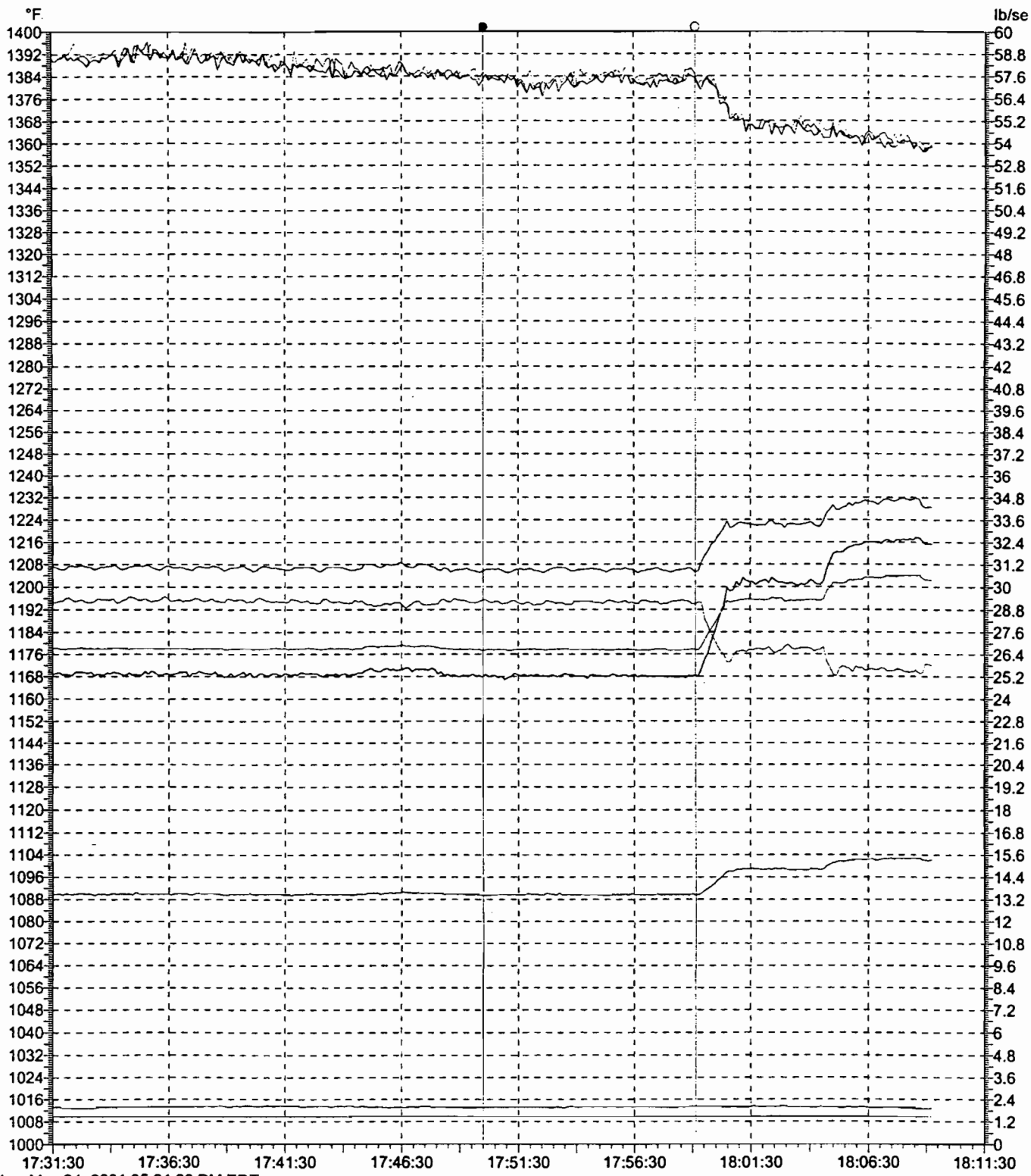
Axis	Pen	Signal Name	Left Value	Right Value	Units	Description
<		G8B\TTXM	1195.04	1195.43	°F	Exhaust Temp Median Corrected By Average
>		G8B\FQG	13.4816	13.4237	lb/se	Gas Fuel Flow
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow
		G8B\ctif1a	97.3557	95.7091	°F	Compressor Inlet Thermocouple 1A
		G8B\ctif1b	97.9904	96.2437	°F	Compressor Inlet Thermocouple 1B
		G8B\CTIM	97.3557	95.7091	°F	Compressor Inlet Temperature
		G8B\CMHUM	0.0167556	0.0164304	#H/#A	Specific Humidity
		G8B\DWATT	84.5924	83.9813	MW	Generator Watts Max Selected
		G8B\CPD	133.595	133.048	psia	Compressor Discharge Press Max Select
		G8B\csgv	51.7462	51.4031	DGA	IGV angle in deg
		G8B\WQ	2.46854	2.4684	lb/se	Water Injection Flow from Feedback
		G8B\WXJ	2.10177e+038	2.10165e+038	ratio	Ratio of Actual Fuel to NOx Water Flow
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow

*50% Load
Run 3*

Low	Hig
1000	140
0	6
0	10
0	10
0	10
0	10
0	20
0	30
0	10
0	10
0	0
0	0

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performance.trn - Event 0 of 1 - Printed 05/24/01 06:10:49 PM



Thursday, May 24, 2001 05:31:30 PM EDT

Left Cursor 05/24/01 05:50:00 PM.270 - Right Cursor 05/24/01 05:59:09 PM.459 - Difference 549.189 seconds

Axis	Pen	Signal Name	Left Value	Right Value	Units	Description	Low	High
<		G8B\TTXM	1195.43	1194.05	°F	Exhaust Temp Median Corrected By Average	1000	1400
>		G8B\FQG	13.4242	13.4304	lb/se	Gas Fuel Flow	0	60
		G8B\FQLM1	0	0	lb/se	Liquid Fuel Mass Flow	0	10
		G8B\ctif1a	95.7004	96.0774	°F	Compressor Inlet Thermocouple 1A	0	100
		G8B\ctif1b	96.242	95.7279	°F	Compressor Inlet Thermocouple 1B	0	100
		G8B\CTIM	95.7004	95.7279	°F	Compressor Inlet Temperature	0	100
		G8B\CMHUM	0.0164269	0.0168772	#H/#A	Specific Humidity	0	0
		G8B\DWATT	83.9739	84.1402	MW	Generator Watts Max Selected	0	200
		G8B\CPD	133.046	133.303	psia	Compressor Discharge Press Max Select	0	300
		G8B\csgv	51.4009	51.3386	DGA	IGV angle in deg	0	100
		G8B\WQ	2.46841	2.46848	lb/se	Water Injection Flow from Feedback	0	100
		G8B\WXJ	2.10166e+038	2.10172e+038	ratio	Ratio of Actual Fuel to NOx Water Flow	0	0
		G8B\WXC	0	0	ratio	Ratio of Required Fuel to NOx Water Flow	0	0

Appendix N

**Unit 8B
AMBIENT DATA**

