PARTICULATE AND VISIBLE EMISSIONS TEST REPORT FOR ST. JOHNS RIVER POWER PARK UNIT 2 JACKSONVILLE, FL

December 19, 2000

Job # 00-131

Test Report Date: 1-15-01

GRACE CONSULTING, INC.
EMISSIONS TESTING SERVICES

January 15, 2001

I, Hal Stiles, hereby certify that the data obtained for St. Johns River Power Park, Unit 2 Stack in Jacksonville, FL are in accordance with procedures set forth by the USEPA. This report accurately represents the data obtained from the testing procedures and analysis of this data.

Hal Stiles
Crew Chief

I, Carl Vineyard, hereby certify that I have reviewed this report and to the best of my knowledge, the data presented herein is complete and accurate.

Carl Vineyard, P.E.
Test Engineer

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INTRODUCTION

This report presents the results of the emissions tests performed for St. Johns River Power Park, Unit 2 Stack in Jacksonville, FL.

The purpose of the tests was to determine the emissions of the unit for compliance. The results can be found in the Summary of Test Results section of this report.

The testing was performed by Grace Consulting, Inc., located at 510 Dickson Street - Wellington, OH 44090. Present during the testing were Hal Stiles, Scott Teague, Josh Nichols, and Dennis Haynes from Grace Consulting, Inc. Mark Loechelt and Al Castro were present from St. Johns River Power Park.

The tests were performed on December 19, 2000. The testing was completed in accordance with USEPA test methods as published in the July 1, 2000 Federal Register, - "Standards of Performance for New Stationary Sources" and subsequent revisions.

The sampling and analytical procedures can be found in the Sampling and Analytical Procedures section of this report. The raw field data and the equations used to determine the final results are presented in the Appendix section.

SUMMARY OF TEST RESULTS

The following presents the results of the emissions tests performed for St. Johns River Power Park, Unit 2 Stack in Jacksonville, FL.

PARTICULATE EMISSIONS

Run #	Description	Test Date	lb/dscf	lbs/hr	lb/mmBtu
1	Unit 2	12-19-00	2.88E-07	23.73	.004
2	Unit 2	12-19-00	3.45E-07	27.90	.005
3	Unit 2	12-19-00	2.79E-07	22.71	.004
AVG.			**3.04E-07**	**24.78**	**.004**

VISIBLE EMISSIONS

Run #	Description	Test Date	Times	%Opacity
1	Unit 2	12-19-00	11:39-12:39	6.4%

The complete results can be found on the computer printouts following.

GRACE CONSULTING, INC.

Particulate Analysis

St. Johns River Power Park
Jacksonville, FL
Unit 2 Stack
00-131

Run Number			1	2	3
Date			12/19/00	12/19/00	12/19/00
Location			Unit 2 Stack	Unit 2 Stack	Unit 2 Stack
Comment					
Start Time			8:46	11:45	17:30
End Time			11:00	13:53	19:45
Barometric Pressure	In. Hg.	Pb	29.13	29.13	29.13
Static Pressure	In. H2O	Pf	-0.47	-0.59	-0.66
Volume of Condensate	mls.	Vlc	334.3	336.3	306.5
Volume Sampled	dcf	Vm	119.915	119.73	118.97
Meter Correction Factor		Y	0.988	0.988	0.988
Square Root of Delta P			1.07	1.055	1.052
Orifice Pressure	In. H2O		3.32	3.23	3.21
Meter Temperature	Degree F		90	94	91
Flue Temperature	Degree F		144	146	147
Percent CO2	%		13.8	13.6	13.8
Percent O2	%		6.7	6.3	5.7
Diameter of Nozzle	In.		0.242	0.242	0.242
Area of Flue	Sq. ft.		471.435	471.435	471.435
Sample Time	min.		120	120	120
Weight Gain	grams		0.0146	0.0173	0.014
F-Factor			9,780	9,780	9,780
Absolute Flue Pressure	in. Hg	Ps	29.10	29.09	29.08
Corrected Sample Volume	dscf	Vms	111.66	110.66	110.55
Moisture of Flue Gas	%	Bws	12.35%	12.51%	11.54%
Molecular Weight	lb/lb-mole	Ms	28.93	28.87	29.00
Velocity of Flue Gas	fps	Vs	65.08	64.36	64.09
Volume of Flue Gas	ACFM	Vo	1,840,969	1,820,397	1,812,873
Volume of Flue Gas	DSCFM	Qsd	1,371,659	1,348,947	1,355,800
Dust Concentration	lb/dscf	Wd	2.88E-07	3.45E-07	2.79E-07
Dust Concentration	lb/hr	Wh	23.73	27.90	22.72
Dust Concentration	gr/acf	Wa	1.50E-03	1.79E-03	1.46E-03
Dust Concentration	gr/dscf	Ws	2.02E-03	2.41E-03	1.95E-03
Isokinetic Rate	%	%I	100.2	100.9	100.3
Particulate Emissions	lb/mmBtu	DI	0.004	0.005	0.004

Averages:			Part. Emis:		
	Flue Temp.:	145.6667		lb/dscf	3.04E-07
	ACFM:	1,824,747		lb/hr	24.78
	DSCFM:	1,358,802		gr/acf	1.58E-03
	Percent O2:	6.23%		gr/dscf	2.13E-03
				lb/mmBtu	0.004

METHOD 5B - DETERMINATION OF NONSULFURIC ACID PARTICULATE MATTER EMISSIONS FROM STATIONARY SOURCES

NOTE: This method does not include all of the specifications (*e.g.*, equipment and supplies) and procedures (*e.g.*, sampling and analytical) essential to its performance. Some material is incorporated by reference from other methods in this part. Therefore, to obtain reliable results, persons using this method should have a thorough knowledge of at least the following additional test methods: Method 1, Method 2, Method 3, Method 5.

1.0 Scope and Application.

1.1 Analyte. Nonsulfuric acid particulate matter. No CAS number assigned.

1.2 Applicability. This method is determining applicable for the determination of nonsulfuric acid particulate matter from stationary sources, only where specified by an applicable subpart of the regulations or where approved by the Administrator for a particular application.

1.3 Data Quality Objectives. Adherence to the requirements of this method will enhance the quality of the data obtained from air pollutant sampling methods.

2.0 Summary of Method.

Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at a

temperature of 160 ± 14 °C (320 ± 25 °F). The collected sample is then heated in an oven at 160 °C (320 °F) for 6 hours to volatilize any condensed sulfuric acid that may have been collected, and the nonsulfuric acid particulate mass is determined gravimetrically.

3.0 Definitions. [Reserved]

4.0 Interferences. [Reserved]

5.0 Safety.

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method may not address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to performing this test method.

6.0 Equipment and Supplies.

Same as Method 5, Section 6.0, with the following addition and exceptions:

6.1 Sample Collection. The probe liner heating system and filter heating system must be capable of maintaining a sample gas temperature of 160 ± 14 °C (320 ± 25 °F).

6.2 Sample Preparation. An oven is required for drying the sample.

7.0 Reagents and Standards.

Same as Method 5, Section 7.0.

8.0 Sample Collection, Preservation, Storage, and Transport.

Same as Method 5, with the exception of the following:

8.1 Initial Filter Tare. Oven dry the filter at 160 ± 5 °C (320 ± 10 °F) for 2 to 3 hours, cool in a desiccator for 2 hours, and weigh. Desiccate to constant weight to obtain the initial tare weight. Use the applicable specifications and techniques of Section 8.1.3 of Method 5 for this determination.

8.2 Probe and Filter Temperatures. Maintain the probe outlet and filter temperatures at 160 ± 14 °C (320 ± 25 °F).

9.0 Quality Control.

Same as Method 5, Section 9.0.

10.0 Calibration and Standardization.

Same as Method 5, Section 10.0.

11.0 Analytical Procedure.

Same as Method 5, Section 11.0, except replace Section 11.2.2 with the following:

11.1 Container No. 2. Note the level of liquid in the container, and confirm on the analysis sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred, either void the sample or use methods, subject to the approval of the Administrator, to correct the

final results. Measure the liquid in this container either volumetrically to ± 1 ml or gravimetrically to ± 0.5 g. Transfer the contents to a tared 250 ml beaker, and evaporate to dryness at ambient temperature and pressure. Then oven dry the probe and filter samples at a temperature of 160 ± 5 °C (320 ± 10 °F) for 6 hours. Cool in a desiccator for 2 hours, and weigh to constant weight. Report the results to the nearest 0.1 mg.

12.0 Data Analysis and Calculations.

Same as in Method 5, Section 12.0.

13.0 Method Performance. [Reserved]

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 References.

Same as Method 5, Section 17.0.

17.0 Tables, Diagrams, Flowcharts, and Validation Data.

[Reserved]

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Prepared by **Emission Measurement Branch** — **EMTIC TM-009**
Technical Support Division, OAQPS, EPA — October 25, 1990

Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

INTRODUCTION

(a) Many stationary sources discharge visible emissions into the atmosphere; these emissions are usually in the shape of a plume. This method involves the determination of plume opacity by qualified observers. The methods includes procedures for the training and certification of observers and procedures to be used in the field for determination of plume opacity.

(b) The appearance of a plume as viewed by an observer depends upon a number of variables, some of which may be controllable in the field. Variables which can be controlled to an extent to which they no longer exert a significant influence upon plume appearance include: angle of the observer with respect to the plume; angle of the observer with respect to the sun; point of observation of attached and detached steam plume; and angle of the observer with respect to a plume emitted from a rectangular stack with a large length to width ratio. The method includes specific criteria applicable to these variables.

(c) Other variables which may not be controllable in the field are luminescence and color contrast between the plume and the background against which the plume is viewed. These variables exert an influence upon the appearance of a plume as viewed by an observer and can affect the ability of the observer to assign accurately opacity values to the observed plume. Studies of the theory of plume opacity and field studies have demonstrated that a plume is most visible and presents the greatest apparent opacity when viewed against a contrasting background. Accordingly, the opacity of a plume viewed under conditions where a contrasting background is present can be assigned with the greatest degree of accuracy. However, the potential for a positive error is also the greatest when a plume is viewed under such contrasting conditions. Under conditions presenting a less contrasting background, the apparent opacity of a plume is less and approaches zero as the

color and luminescence contrast decrease toward zero. As a result, significant negative bias and negative errors can be made when a plume is viewed under less contrasting conditions. A negative bias decreases rather than increases the possibility that a plant operator will be incorrectly cited for a violation of opacity standards as a result of observer error.

(d) Studies have been undertaken to determine the magnitude of positive errors made by qualified observers while reading plumes under contrasting conditions and using the procedures set forth in this method. The results of these studies (field trials) which involve a total of 769 sets of 25 readings each are as follows:

(1) For black plumes (133 sets at a smoke generator), 100 percent of the sets were read with a positive error of less than 7.5 percent opacity; 99 percent were read with a positive error of less than 5 percent opacity. (Note: For a set, positive error = average opacity determined by observers' 25 observations -average opacity determined from transmissometer's 25 recordings.)

(2) For white plumes (170 sets at a smoke generator, 168 sets at a coal-fired power plant, 298 sets at a sulfuric acid plant), 99 percent of the sets were read with a positive error of less than 7.5 percent opacity; 95 percent were read with a positive error of less than 5 percent opacity.

(e) The positive observational error associated with an average of twenty-five readings is therefore established. The accuracy of the method must be taken into account when determining possible violations of applicable opacity standards.

1. PRINCIPLE AND APPLICABILITY

1.1 Principle. The opacity of emissions from stationary sources is determined visually by a qualified observer.

1.2 Applicability. This method is applicable for the determination of the opacity of emissions from stationary sources pursuant to § 60.11(b) and for visually determining opacity of emissions.

2. PROCEDURES

The observer qualified in accordance with Section 3 of this method shall use the following procedures for visually determining the opacity of emissions.

2.1 Position. The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with

maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction and, when observing opacity of emissions from rectangular outlets (e.g., roof monitors, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g., stub stacks on baghouses).

2.2 Field Records. The observer shall record the name of the plant, emission location, facility type, observer's name and affiliation, and the date on a field data sheet (Figure 9-1). The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on a field data sheet at the time opacity readings are initiated and completed.

Figure 9-1. Record of visual determination of opacity.

Company_____
Location_____
Test No._____
Date_____
Type Facility_____
Control Device_____
Hours of Observation_____
Observer_____

Observer Certification Date_____ Observer Affiliation_____

Point of Emissions_____ Height of Discharge_____

CLOCK TIME	Initial			Final
OBSERVER LOCATION				
Distance to discharge				
Direction from				
Height of observation				
BACKGROUND DESCRIPTION				
WEATHER CONDITIONS				
Wind Direction				
Wind Speed				
Ambient Temperature				
SKY CONDITIONS (clear, overcast, % clouds, etc.)				
PLUME DESCRIPTION				
Color				
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time	Opacity	
	Start - End	Sum	Average

Readings ranged from ___ to ___ % opacity.

The source was/was not in compliance with ___ at the time evaluation was made.

Visual Determination of Opacity

Company _____
Location _____
Job # _____
Run # _____

Observer _____
Date _____
Start Time _____
End Time _____

	0	15	30	45
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				

	0	15	30	45
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				

% Opacity _____

Comments: _____

2.3 Observations. Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume but instead shall observe the plume momentarily at 15-second intervals.

2.3.1 Attached Steam Plumes. When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible. The observer shall record the approximate distance from the emission outlet to the point in the plume at which the observations are made.

2.3.2 Detached Steam Plume. When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water vapor and the formation of the steam plume.

2.4 Recording Observations. Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on an observational record sheet. (See Figure 9-2 for an example.) A minimum of 24 observations shall be recorded. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

2.5 Data Reduction. Opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall two sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. If an applicable standard specifies an averaging time requiring more than 24 observations, calculate the average for all observations made during the specified time period. Record the average opacity on a record sheet. (See Figure 9-1 for an example.)

3. QUALIFICATION AND TESTING

3.1 Certification Requirements. To receive certification as a qualified observer, a candidate must be tested and demonstrate the ability to assign opacity readings in 5 percent increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15 percent opacity on any one reading and average error not to exceed 7.5 percent opacity in each category. Candidates shall be tested according to the procedures described in Section 3.2. Smoke generators used pursuant to Section 3.2 shall be equipped with a smoke meter which meets the requirements of Section 3.3. The certification shall be valid for a period of 6 months, at which time the qualification procedure must be repeated by any observer in order to retain certification.

3.2 Certification Procedure. The certification test consists of showing the candidate a complete run of 50 plumes--25 black plumes and 25 white plumes-generated by a smoke generator. Plumes within each set of 25 black and 25 white runs shall be presented in random order. The candidate assigns an opacity value to each plume and records his observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as part of a smoke school or training program and may be preceded by training or familiarization runs of the smoke generator during which candidates are shown black and white plumes of known opacity.

3.3 Smoke Generator Specifications. Any smoke generator used for the purposes of Section 3.2 shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display in-stack opacity based upon a pathlength equal to the stack exit diameter, on a full 0 to 100 percent chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table 9–1. The smoke meter shall be calibrated as prescribed in Section 3.3.1 prior to the conduct of each smoke reading test. At the completion of each test, the zero and span drift shall be checked and if the drift exceeds ±1 percent opacity, the condition shall be corrected prior to conducting any subsequent test runs. The smoke meter shall be demonstrated, at the time of installation, to meet the specifications listed in Table 9-1. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry including the chart recorder or output meter, or every 6 months, whichever occurs first.

TABLE 9-1 - SMOKE METER DESIGN AND PERFORMANCE SPECIFICATIONS

Parameter	Specification
a. Light Source	Incandescent lamp operated at nominal rated voltage
b. Spectral reponse of photocell	Photopic (daylight spectral response of the human eye - Citation 3)
c. Angle of view	15° maximum total angle
d. Angle of projection	15° maximum total angle
e. Calibration error	±3% opacity, maximum
f. Zero and span drift	±1% opacity, 30 minutes
g. Response time	5 seconds

3.3.1 Calibration. The smoke meter is calibrated after allowing a minimum of 30 minutes warmup by alternately producing simulated opacity of 0 percent and 100 percent. When stable response at 0 percent or 100 percent is noted, the smoke meter is adjusted to produce an output of 0 percent or 100 percent, as appropriate. This calibration shall be repeated until stable 0 percent and 100 percent opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

3.3.2 Smoke Meter Evaluation. The smoke meter design and performance are to be evaluated as follows:

3.3.2.1 Light Source. Verify from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within ±5 percent of the nominal rated voltage.

3.3.2.2 Spectral Response of Photocell. Verify from manufacturer's data that the photocell has a photopic response; i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity in (b) of Table 9–1.

3.3.2.3 Angle of View. Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. The total angle of view may be calculated from: $\theta = 2 \tan^{-1} (d/2L)$, where θ = total angle of view; d = the sum of the photocell diameter + the diameter of the limiting aperture; and L = the distance from the photocell to the limiting aperture. The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters this is normally an orifice plate.

3.3.2.4 Angle of Projection. Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. The total angle of projection may be calculated from: $\theta = 2 \tan^{-1} (d/2L)$, where θ = total angle of projection; d = the sum of the length of the lamp filament + the diameter of the limiting aperture; and L = the distance from the lamp to the limiting aperture.

3.3.2.5 Calibration Error. Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter according to Section 3.3.1 and then inserting a series of three neutral-density filters of nominal opacity of 20, 50, and 75 percent in the smoke meter pathlength. Filters calibrated within 2 percent shall be used. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The

maximum error on any one reading shall be 3 percent opacity.

3.3.2.6 Zero and Span Drift. Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.

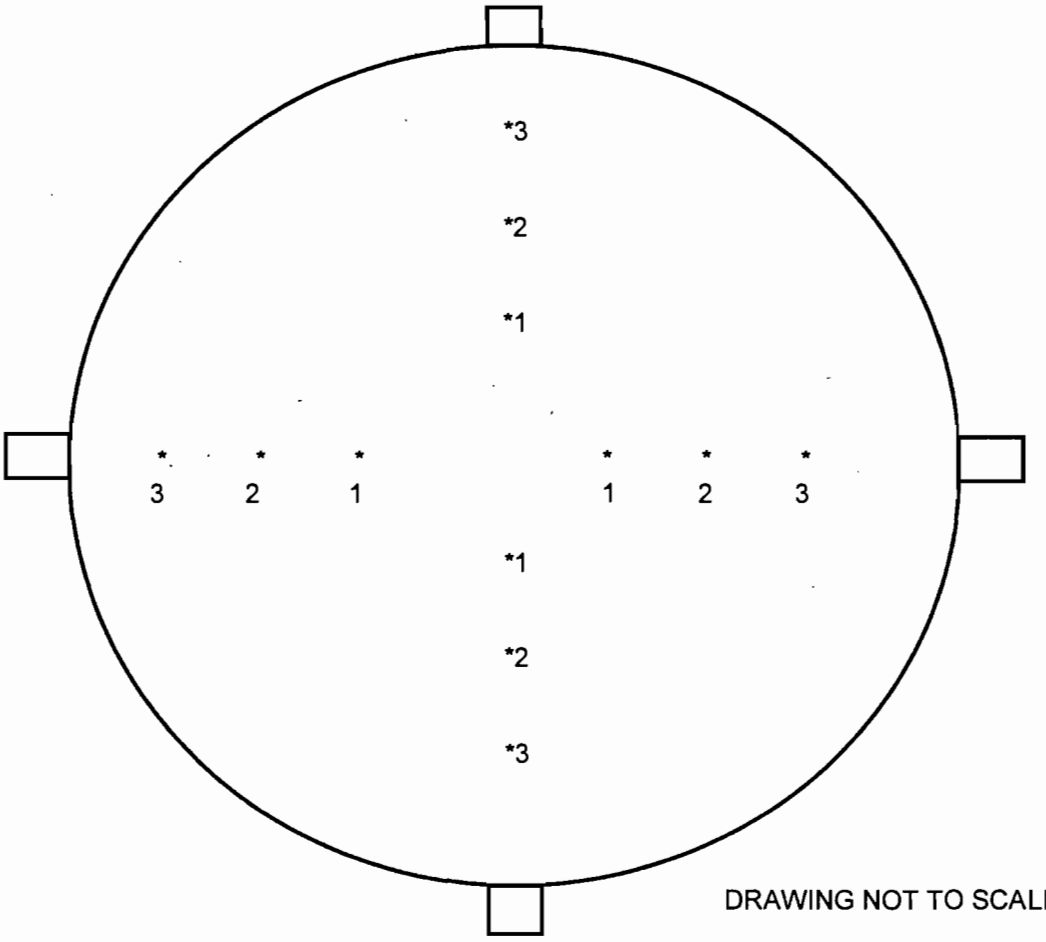
3.3.2.7 Response Time. Determine the response time by producing the series of five simulated 0 percent and 100 percent opacity values and observing the time required to reach stable response. Opacity values of 0 percent and 100 percent may be simulated by alternately switching the power to the light source off and on while the smoke generator is not operating.

4. BIBLIOGRAPHY

1. Air Pollution Control District Rules and Regulations, Los Angeles County Air Pollution Control District, Regulation IV, Prohibitions, Rule 50.

2. Weisburd, Melvin I., Field Operations and Enforcement Manual for Air, U.S. Environmental Protection Agency, Research Triangle Park, NC, APTD-1100, August 1972, pp. 4.1-4.36.

3. Condon. E.U., and Odishaw, H., Handbook of Physics, McGraw-Hill Co., New York, NY, 1958, Table 3.1, p. 6-52.



DRAWING NOT TO SCALE

POINTS	DISTANCE FROM INSIDE WALL
1)	87.024 "
2)	42.924 "
3)	12.936 "

STACK AREA = 471.435 sq ft
STACK DIAMETER = 24.50 '

St. Johns River Power Park
Unit 2

GCI

APPENDIX

SAMPLE CALCULATIONS

ST. JOHNS RIVER POWER PARK
UNIT 2
12-19-00
RUN 1

$$Ps = Pb + \left(\frac{Pf}{13.6}\right)$$

$$29.10 = 29.13 + \left(\frac{-.47}{13.6}\right)$$

Vm = (Final Dry Gas Meter reading – Initial Dry Gas Meter reading) x Y

118.47602 = (155.295-035.380) x .988

$$Vm(std) = Vm \times \frac{528}{Tm + 460} \times \left(\frac{Pb + \frac{DeltaH}{13.6}}{29.92}\right)$$

$$111.66 = 118.47602 \text{ x } \frac{528}{550} \times \left(\frac{29.13 + \frac{3.32}{13.6}}{29.92}\right)$$

Vwc = .04706 x Vl

Vwsg = .04715 x Wsg

Vwc(std) = Vwc + Vwsg

13.1768 = .04706 x 280 ml of condensate

2.560245 = .04715 x 54.3 g. of silica gel

15.737045 Vwc(std) = 13.1768 + 2.560245

$$Bws = \frac{Vwc(std)}{Vwc(std) + Vm(std)} \times 100$$

$$.1235 = \frac{15.737045}{15.737045 + 111.66} \times 100$$

$\%N_2$ dry = 100 – ($\%CO_2$ + $\%O_2$ + %CO)

79.50 = 100 – (13.80 + 6.70 + 0)

Md = (.44 x %CO2) + (.32 x %O2) + (.28 x (%N2+%CO))

30.476 = (.44 x 13.80%) + (.32 x 6.70%) + (.28 x 79.50%)

Ms = Md (1-Bws) + (18.0 x Bws)

28.93 = 30.476 x (1-.1235) + (18.0 x .1235)

$$Vs = 85.49 \times Cp \times \sqrt{\Delta P} \times \sqrt{\frac{Ts}{Ps \times Ms}}$$

$$65.08 = 85.49 \times .84 \times 1.070 \times \sqrt{\frac{604}{29.10 \times 28.93}}$$

ACFM = 60 x Vs x A

1,840,969 = 60 x 65.08 x 471.435

$$DSCFM = Tstd \times ACFM \times Ps \times \left(\frac{1-(Bws-100)}{(Ts \times 29.92)}\right)$$

$$1{,}371{,}659 = 528 \times 1{,}840{,}969 \times 29.10 \times \left(\frac{.8765}{604 \times 29.92}\right)$$

Wg = Front Half weight gain in grams

Wg = .0146

Wp = .002205 x Wg

.000032193 = .002205 x .0146

$$Wd = \frac{Wp}{Vm(std)} \quad \text{(lb/dscf)}$$

$$2.88\text{-}07 = \frac{.000032193}{111.66}$$

Wh = Wd x Qsd (lb/hr)

23.73 = 2.88E-07 x 82,299,540

Ws = Wd x 7000 (gr/dscf)

2.02E-03 = 2.88E-07 x 7000

$$DI = \frac{f - factor \times 20.9 \times Wd}{(20.9 - \%O2)} \quad \text{(lb/mmBtu)}$$

$$.004 = \frac{9780 \times 20.9 \times 2.88E-07}{20.9 - 6.70}$$

$$\%I = \frac{1.667 \times Ts \times \left| .002669 \times Vlc + \frac{Vm \times Y}{Tm} \right| \left(Pbar + \frac{DeltaH}{13.6} \right)}{* \times Vs \times Ps \times An}$$

$$100.2\% = \frac{1.667 \times 604 \times \left| .002669 \times 334.3 + \frac{119.915 \times .988}{550} \right| \left(29.13 + \frac{3.32}{13.6} \right)}{120 \times 65.08 \times 29.10 \times .0003191}$$

NOMENCLATURE

A	=	cross-sectional area of stack, (ft^2)
acf	=	actual cubic feet
acfm	=	actual cubic feet per minute
A_n	=	cross-sectional area of nozzle, (ft^2)
B_{ws}	=	water vapor in the gas stream, proportion by volume
C_a	=	acetone blank residue concentration, mg/mg
C_p	=	pitot tube coefficient, dimensionless
$C_{p(s)}$	=	type S pitot tube coefficient, dimensionless
$C_{p(std)}$	=	standard pitot tube coefficient; use 0.99
C_s	=	concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, (gr/dscf)
D_e	=	equivalent diameter
D_l	=	dust loading per heat input, (lb/mmBtu)
dscf	=	dry standard cubic feet
dscm	=	dry standard cubic meters
fps	=	feet per second
gms	=	grams
gm-mole	=	gram-mole
grs	=	grains
ΔH	=	orifice pressure drop in inches water, average
hr	=	hour
I	=	percent of isokinetic sampling
In. Hg	=	inches mercury
L	=	length.
L_1	=	Individual leakage relate observed during the leak-check conducted prior to the first component change, (ft^3/min)
L_a	=	maximum acceptable leakage rate for either a pretest leak-check or for a leak-check following a component change; equal to 0.00057 m^3/min (0.020 cfm) or 4 percent of the average sampling rate, whichever is less
lbs	=	pounds
lb-mole	=	pound-mole
L_i	=	Individual leakage rate observed during the leak-check conducted prior to the "i^{th}" component change (i = 1, 2, 3..n), (cfm)
L_p	=	leakage rate observed during the post-test leak-check, (cfm)
%M	=	percent moisture by volume
m_a	=	mass of residue of acetone after evaporation, mg
M_d	=	molecular weight of stack gas, dry basis, (lb/lb-mole)
mmBtu	=	million Btu
m_n	=	total amount of particulate matter collected, mg
M_s	=	molecular weight of stack gas, wet basis, (lb/lb-mole)
M_w	=	molecular weight of water, (18.0 lb/lb-mole)
n	=	total number of traverse points
P_b	=	barometric pressure at the sampling site, (in Hg)
P_f	=	static pressure in flue in inches water, average
P_g	=	stack static pressure, (in. Hg)
P_s	=	absolute stack gas pressure, (in. Hg)
P_{std}	=	standard absolute pressure, (29.92 in. Hg)
Q_{sd}	=	dry volumetric stack gas flow rate corrected to standard conditions, (dscf/hr)
R	=	ideal gas constant, $\{21.85$ [(in Hg) (ft^3)] / [(°R) (lb-mole)]$\}$
$\sqrt{\Delta P}$	=	square root of velocity head in inches water, average
scf	=	standard cubic feet
scm	=	standard cubic meters
T	=	sensitivity factor for differential pressure gauges

T_m	=	absolute average DGM temperature, (°R)
T_s	=	absolute average stack gas temperature, (°R)
T_{std}	=	standard absolute temperature, (528 °R)
V_a	=	volume of acetone blank, ml
V_{aw}	=	volume of acetone used in wash, ml
V_l	=	volume of condensate through the impingers, ml
V_{lc}	=	total volume of liquid collected in impingers and silica gel, ml
V_m	=	volume of gas sample as measured by dry gas meter, (dcf)
$V_{m(std)}$	=	volume of gas sample measured by the dry gas meter, corrected to standard conditions, (dscf)
V_o	=	volume of flue gas at actual conditions in cubic feet per minute
$V_{w(std)}$	=	volume of water vapor in the gas sample, corrected to standard conditions, (scf)
V_{wc}	=	volume of water condensed in impingers corrected to standard conditions
V_{wsg}	=	volume of water collected in silica gel corrected to standard conditions
V_s	=	average stack gas velocity, (ft/sec)
W	=	width
W_a	=	weight of residue in acetone wash, mg
W_d	=	weight of dust collected per unit volume, (lb/dscf)
W_g	=	weight of dust collected in grams
W_h	=	weight of dust collected per unit volume, (lb/hr), dry basis
W_p	=	weight of dust collected in pounds
W_s	=	weight of dust collected per unit volume, (gr/dscf)
W_{sg}	=	weight gain of impinger silica gel in grams
Y	=	dry gas meter calibration factor
$*_a$	=	density of acetone, mg/ml
*	=	total sampling time, min
$*_1$	=	sampling time interval, from the beginning of a run until the first component change, min
*i	=	sampling time interval, between two successive component changes, beginning with the interval between the first and second changes, min
$*_p$	=	sampling time interval, from the final (n^{th}) component change until the end of the sampling run, min
13.6	=	specific gravity of mercury
60	=	sec/min
100	=	conversion to percent

Particulate Field Data Sheet

5

Client: SJRPP						Date: 12-19-00			Orsat Analysis			
Project No: 00-131			Operator: Haynes / Nichols						CO_2%	+O_2	O_2%	
Sampling Location: U2 stack						Run No: 1			13.80		4.70	
Filter No: 00-275			Acetone No: 2-1			Condensate: 280 (ml) or g			13.80		4.70	
Barometric Pressure: 29.13			Static Pressure: -.47			Probe Number:			13.80		4.70	
Nozzle Diameter: .242			Nozzle Number: N3			Pitot Number:						
Meter Corr.Factor: .988			Pitot Coefficient: .84			Meter No: 3-A			RM: 5b			Sil.Gel
Sample Pt. Time: 10 min			Meter Orifice: 3.29149			Date Calibrated: 9-6-00			Flue Area: 471.435 ft.^{2}			54.3 g
Assumed % Moisture: 12			Delta H @: 1.852			Leak Test Initial: .005 @ 16"			Final: 0 @ 16"			(1 min.)
Saturated Gas Stream: Y or (N)												

Sample Point	Delta P	Sq.Rt. Delta P	Delta H	Temperature (Degrees Fahrenheit) Stack	Probe 223-273	Imp.Out < 68	Oven 223-273	Meter In	Meter Out	Vac. Pr. (in.Hg)	Dry Gas Meter Reading (Cubic Feet)
Start Time: 8:46									Initial DGM Reading:		35.380
D 1	1.2	1.095	3.472	146	323	47	320	76	76	4	45.620
2	1.2	1.095	3.472	146	320	59	320	88	77	4	55.955
3	.99	.995	2.865	145	316	65	306	90	79	4	65.330
C 1	1.2	1.095	3.472	143	315	66	308	92	81	4	75.570
2	1.2	1.095	3.472	141	314	63	306	100	83	4	85.730
3	1.0	1.000	2.894	143	314	63	308	102	86	4	95.030
B 1	1.3	1.140	3.762	144	307	59	302	98	86	5	105.680
2	1.3	1.140	3.762	143	305	60	300	104	87	5	116.460
3	1.0	1.000	2.894	143	300	60	305	104	89	4	125.850
A 1	1.2	1.095	3.472	143	305	58	303	99	87	4	136.090
2	1.2	1.095	3.472	144	320	61	300	104	88	4	145.950
3	.98	.990	2.836	143	321	65	309	105	89	4	155.295
Stop Time: 11:00											
avg's.		1.070	3.32	144				90			119.915

Particulate Field Data Sheet

Client: SJRPP						Date: 12-19-00				Orsat Analysis	CO_2%	+O_2	O_2%
Project No:				Operator: Haynes / Nichols									
Sampling Location: U2 - stack						Run No: 2					13.00		6.3
Filter No: 00-262			Acetone No: 2-2			Condensate: 300 ml or g					13.00		6.3
Barometric Pressure: 29.13			Static Pressure: -.[redacted]59			Probe Number:					13.00		6.3
Nozzle Diameter: .242			Nozzle Number: N3			Pitot Number:							
Meter Corr.Factor: .988			Pitot Coefficient:			Meter No: 3-A				RM: 5b			Sil.Gel
Sample Pt. Time: 10 min.			Meter Orifice: 3.29149			Date Calibrated: 9-6-00				Flue Area:		ft.^{2}	36.3 g
Assumed % Moisture: 12			Delta H @: 1.852			Leak Test Initial: 0 @ 16"				Final: 0 @ 16" (1 min.)			
Saturated Gas Stream: Y or N													

Sample Point	Delta P	Sq.Rt. Delta P	Delta H	Temperature (Degrees Fahrenheit) Stack	Probe 223-273	Imp.Out < 68	Oven 223-273	Meter In	Meter Out	Vac. Pr. (in.Hg)	Dry Gas Meter Reading (Cubic Feet)
Start Time: 11:45									Initial DGM Reading:		155.560
D 1	1.2	1.095	3.472	144	325	53	298	93	81	4	165.720
2	1.2	1.095	3.472	144	336	60	318	102	84	4	175.590
3	.99	.995	2.865	144	336	62	318	102	86	4	184.970
C 1	1.2	1.095	3.472	144	342	59	321	97	86	4	195.100
2	1.1	1.049	3.183	144	334	63	323	103	87	4	204.955
3	1.0	1.000	2.894	147	335	66	324	103	88	4	214.280
b 1	1.3	1.140	3.762	147	330	61	324	100	88	4	224.900
2	1.2	1.095	3.472	147	315	57	319	104	89	4	235.040
3	.95	.975	2.749	148	312	56	317	103	88	3	244.150
A 1	1.3	1.140	3.762	148	320	56	319	98	87	4	254.560
2	1.0	1.000	2.894	146	316	60	315	103	89	4	265.060
3	.96	.980	2.778	147	319	64	316	103	94	3	275.290
Stop Time: 13:53											
avg's.		1.055	3.23	146				94			119.730

Particulate Field Data Sheet

Client: SJRPP						Date: 12-19-00			Orsat Analysis		
Project No:				Operator: Haynes / Nichols					CO_2%	+O_2	O_2%
Sampling Location: U2 - Stack						Run No: 3			13.80		5.7
Filter No: 00-131			Acetone No: 2-3			Condensate: 270 (ml) or g			13.80		5.7
Barometric Pressure: 29.13			Static Pressure: -.[illegible]66			Probe Number:			13.80		5.7
Nozzle Diameter: .242			Nozzle Number: N3			Pitot Number:					
Meter Corr.Factor: .988			Pitot Coefficient:			Meter No: 3-A			RM: 56		Sil.Gel
Sample Pt. Time: 10 min			Meter Orifice: 3.29149			Date Calibrated: 9-6-00			Flue Area:	ft.^{2}	36.5 g
Assumed % Moisture: 12			Delta H @: 1.852			Leak Test Initial: 0" @ 15"			Final: 0" @ 10"		(1 min.)
Saturated Gas Stream: Y or (N)											

					Temperature (Degrees Fahrenheit)							Dry Gas
Sample Point	Delta P	Sq.Rt. Delta P	Delta H	Stack	Probe 223-273	Imp.Out < 68	Oven 223-273	Meter In	Meter Out	Vac. Pr. (in.Hg)	Meter Reading (Cubic Feet)
Start Time: 14:43									Initial DGM Reading:		276.170
D 1	1.3	1.140	3.762	147	328	297	250	89	78	4	286.840
2	1.2	1.095	3.472	148	315	57	299	99	82	4	297.410
3	.98	.990	2.836	148	320	57	301	98	84	4	306.712
C 1	1.2	1.095	3.472	146	320	58	301	98	84	4	315.90
2	1.0	2.894	1.000	146	321	58	301	98	84	4	326.010
3	.97	.985	2.807	147	321	59	304	99	84	4	335.320
b 1	1.3	1.140	3.762	147	317	62	305	94	84	[illegible]5	345.970
2	1.2	1.095	3.472	147	311	57	304	99	89	5	356.190
3	.98	.990	2.836	148	309	56	306	99	85	[illegible]4	365.300
A 1	1.2	1.095	3.472	148	313	53	305	96	84	4	375.560
2	1.0	1.000	2.894	145	317	55	300	98	84	4	384.970
3	1.0	1.000	2.894	145	318	59	299	98	85	4	395.140
Stop Time: 16:55											
avg's.		1.052	3.21	147				91			118.970

T S I	TECHNICAL SERVICES, INC 2901 DANESE STREET JACKSONVILLE, FLORIDA 32206 OFFICE 904 - 353 - 5761 FAX 904 - 358 - 2908

PAGE 1 OF 1

START TIME 1139 END TIME 1239

OBSERVATION DATE 12/19/00 TIME ZONE Eastern

FACILITY St Johns River Power Park

SOURCE No. 2 Unit

ADDRESS same

CITY Jacksonville STATE-ZIP FL

PHONE SOURCE ID NO.

PROCESS coal fired boiler OPERATING MODE see chart

CONTROL EQUIP. scrubber OPERATING MODE standard

DESCRIBE EMISSION POINT of the two stacks the eastern

HEIGHT OF EMISSION POINT START 640' END 640'

HEIGHT RELATIVE TO OBSERVER, START 630' END 630'

DISTANCE TO EMISSIONS POINT START ~600m END ~600m

DIRECTION TO EM. PT. START NE END NE

VERTICAL ANGLE TO OBS. PT. START ~ 16° END 16°

DESCRIBE EMISSIONS START water END water

EMISSION COLOR START white END white

WATER DROPLET PLUME (YES) NO (ATTACHED) DETACHED

DESCRIBE PLUME BACKGROUND START sky END sky

BACKGROUND COLOR START grey END grey

SKY CONDITION START overcast END same

WIND SPEED START 2-6 END 2-7

WIND DIRECTION START NNW END NNW

AMBIENT TEMPERATURE START 47 END 48

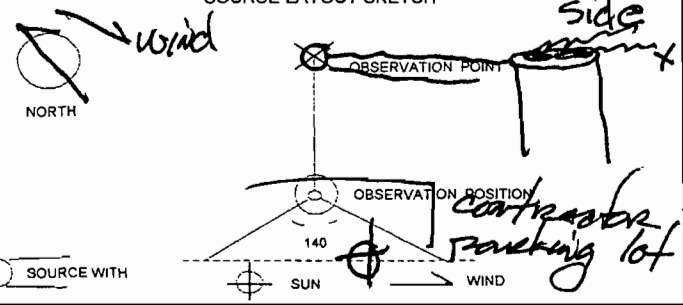
WET BULB TEMP 42

%RH 69

COMMENTS..... during DM run No. 2. two plumes - read plume ~200 meters ~~down~~ from stack

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	5	5	5	5	31	5	5	5	5
2	10	5	5	5	32	5	5	5	5
3	5	10	5	5	33	5	5	5	5
4	5	10	5	5	34	10	5	10	5
5	5	5	10	5	35	5	5	5	5
6	5	5	10	10	36	5	15	15	5
7	5	10	5	5	37	5	5	5	5
8	10	5	5	5	38	5	5	5	5
9	5	5	10	10	39	5	5	5	5
10	10	10	10	10	40	5	5	5	5
11	10	10	10	10	41	5	5	5	5
12	10	10	10	10	42	5	5	5	5
13	10	10	10	10	43	10	5	5	10
14	10	10	10	10	44	10	5	5	5
15	10	10	10	10	45	5	10	10	5
16	10	10	10	10	46	5	5	10	5
17	10	5	5	5	47	5	5	10	5
18	5	5	5	5	48	5	10	5	5
19	5	5	5	5	49	10	5	5	10
20	5	5	5	5	50	5	10	10	5
21	5	5	5	5	51	5	10	5	5
22	5	5	5	5	52	5	5	5	5
23	5	5	5	10	53	5	5	5	5
24	10	10	10	10	54	5	5	5	5
25	10	10	10	5	55	5	5	5	5
26	5	5	5	5	56	5	5	5	5
27	5	5	5	5	57	5	5	5	5
28	5	5	5	5	58	5	5	5	5
29	5	5	5	5	59	5	5	5	5
30	5	5	5	5	60	5	5	5	5

SOURCE LAYOUT SKETCH



HIGHEST OPACITY FOR HIGHEST PERIOD: 10

OBSERVER'S NAME (PRINT) George H Hawkins

SIGNATURE George H Hawkins DATE 12/19/00

ORGANIZATION TECHNICAL SERVICES, INC.

CERTIFIED BY ETA ON ~~JUNE 07~~, 2000 Dec 04, 2000

Avg. 6.4%

Grace Consulting, Inc.
EPA Method 5
522 Series Meter Box Calibration
Calibration Orifice Method
English Meter Box Units, English K' Factor

6

Date:	9/6/00
Model:	Apex
Serial:	3A

Barometric Pressure:	29.4	(in Hg)
Theoretical Critical Vacuum:	13.87	(in Hg)

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

DRY GAS METER READINGS							Critical Orifice Readings					
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Temp Initial (deg F)	Temp Final (deg F)	Orifice Serial #	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	AMBIENT TEMPERATURE Initial (deg F)	Final (deg F)	Average (deg F)
0.62	10	879.423	884.017	4.594	78	80	48	0.3449	20	79	79	79
1.1	10	884.017	890.15	6.133	80	82	55	0.4595	20	79	79	79
1.9	10	890.15	898.115	7.965	82	84	63	0.5958	18	79	80	79.5
3.6	10	898.115	909.025	10.91	84	84	73	0.8215	16	80	80	80
5.6	10	909.025	922.585	13.56	84	89	81	1.0185	15	80	80	80

CORRECTED VOLUME	
DRY GAS METER Vm(std) (cu ft)	ORIFICE Vcr(std) (cu ft)
4.427	4.368
5.895	5.819
7.643	7.541
10.495	10.393
13.048	12.886

DRY GAS METER CALIBRATION FACTOR Y	
Value	Variation
0.987	-0.001
0.987	-6E-04
0.987	-0.001
0.990	0.0027
0.988	-1E-04

ORIFICE CALIBRATION FACTOR dH@	
Value (in H20)	Variation (in H20)
1.828	-0.024
1.827	-0.025
1.879	0.027
1.875	0.022
1.897	0.045

Orifice for Calc.
3.29149

Average	0.988

Average	1.852

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: Joshua Nichols Date: 9-7-00

$$V_{m(std)} = 17.64\,(V_m)\frac{P_b + \frac{\Delta H}{13.6}}{t_m + 460}$$

$$V_{cr(std)} = K'\frac{P_b\theta}{\sqrt{t_{amb} + 460}}$$

$$Y = \frac{V_{cr(std)}}{V_{m(std)}}$$

$$\Delta H_@ = \Delta H\left(\frac{.75\theta}{V_{cr(std)}}\right)^2$$

Grace Consulting, Inc.
EPA Method 5
Post Test Calibration
Calibration Orifice Method
English Meter Box Units, English K' Factor

Date:	12/28/00
Model:	Apex
Serial:	3A

Barometric Pressure:	29.56	(in Hg)
Theoretical Critical Vacuum:	13.94	(in Hg)

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

DRY GAS METER READINGS							Critical Orifice Readings			AMBIENT TEMPERATURE		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Temp Initial (deg F)	Temp Final (deg F)	Orifice Serial #	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
1.8	10	869.245	876.910	7.665	66	67.5	63	0.5958	12	63	62	62.5
1.8	10	876.910	884.560	7.650	67.5	70.5	63	0.5958	12	62	63	62.5
1.8	10	884.560	892.222	7.662	70.5	71	63	0.5958	12	63	63	63

CORRECTED VOLUME	
DRY GAS METER Vm(std) (cu ft)	ORIFICE Vcr(std) (cu ft)
7.622	7.705
7.574	7.705
7.561	7.701

DRY GAS METER CALIBRATION FACTOR Y	
Value	Variation
1.011	-0.005
1.017	0.0017
1.018	0.003

Average 1.016

ORIFICE CALIBRATION FACTOR dH@	
Value (in H20)	Variation (in H20)
1.706	-0.001
1.706	-0.001
1.707	0.001

Average 1.706

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED:_____ Date:_____

$$V_{m(std)} = 17.64\,(V_m)\frac{P_b + \frac{\Delta H}{13.6}}{t_m + 460}$$

$$V_{cr(std)} = K'\frac{P_b\theta}{\sqrt{t_{amb} + 460}}$$

$$Y = \frac{V_{cr(std)}}{V_{m(std)}}$$

$$\Delta H_@ = \Delta H\left(\frac{.75\theta}{V_{cr(std)}}\right)^2$$

PITOT CALIBRATION

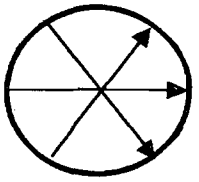
Pitot Tube Assembly		Post Calibration	
Pitot #	new	Visual Inspection	OK
Pitot Coefficient:	0.84	Recalibrated	N/A
		Adjusted Cp	N/A

Grace Consulting,Inc.

Nozzle Calibration Sheet

Date: 9/6/00

Nozzle No.	Measurement A	Measurement B	Measurement C	Average Measurement
1	0.183	0.181	0.181	0.182
2	0.182	0.179	0.180	0.180
3	0.359	0.357	0.359	0.358
4	0.236	0.239	0.237	0.237
5	0.491	0.492	0.490	0.491
6	0.498	0.494	0.495	0.496
8	0.496	0.495	0.495	0.495
11	0.166	0.164	0.164	0.165
13	0.235	0.235	0.238	0.236
14	0.366	0.364	0.367	0.366
15	0.245	0.248	0.245	0.246
18	0.180	0.181	0.182	0.181
19	0.189	0.183	0.189	0.187
22	0.367	0.365	0.364	0.365
23	0.367	0.365	0.366	0.366
25	0.361	0.358	0.358	0.359
27	0.355	0.355	0.355	0.355
29	0.294	0.295	0.294	0.294
30	0.302	0.304	0.305	0.304
31	0.241	0.242	0.241	0.241
33	0.179	0.180	0.180	0.180
35	0.293	0.293	0.291	0.292
36	0.295	0.292	0.294	0.294
39	0.369	0.366	0.366	0.367
40	0.295	0.294	0.295	0.295
42	0.172	0.172	0.170	0.171
43	0.123	0.122	0.125	0.123
52	0.290	0.288	0.287	0.288
55	0.245	0.247	0.247	0.246
61	0.496	0.496	0.494	0.495
75	0.362	0.365	0.365	0.364
81	0.369	0.368	0.371	0.369
86	0.308	0.308	0.307	0.308
88	0.366	0.367	0.366	0.366
90	0.496	0.499	0.496	0.497
94	0.370	0.367	0.369	0.369
115	0.168	0.167	0.168	0.168
123	0.365	0.366	0.366	0.366
A1	0.181	0.181	0.182	0.181
A2	0.180	0.181	0.181	0.181
A22	0.255	0.256	0.254	0.255
A3	0.495	0.498	0.495	0.496
A41	0.358	0.355	0.358	0.357



A5	0.361	0.362	0.361	0.361
A6	0.367	0.368	0.366	0.367
A7	0.355	0.354	0.356	0.355
N1	0.119	0.117	0.119	0.118
N2	0.169	0.166	0.167	0.167
N3	0.242	0.242	0.242	0.242
N4	0.299	0.298	0.299	0.299
N5	0.374	0.370	0.369	0.371
N6	0.425	0.423	0.423	0.424
N7	0.490	0.488	0.491	0.490
X	0.487	0.491	0.491	0.490

Analytical Data Sheet

Client: St. Johns River Power Park | Project No.: 00-131 | Date: 1/15/01

Run No. 1

Filter No. K 00-275
Acetone No. B9
Amount liquid lost during transport: -0-
Acetone blank volume. ml: 107
Acetone wash volume. ml: 101.7
Acetone blank concentration. mg/mg (equation 5-4):
Acetone wash blank. mg (equation 5-5):

Container Number	Weight of Particulate Collected g		
	Final Weight	Tare Weight	Weight Gain
Probe	105.9412	105.9376	.0036
Filter	.5052	.4940	.0112
Back Half			.0000
Less Acetone Blank			.0002
Weight of Particulate Matter			.0146

	Volume of Liquid Water Collected	
	Impinger Volume ml	Silica Gel Weight g
Final	480.0	304.30
Initial	200.0	250.00
Liquid Collected	280.0	54.30
Total Volume Collected	334.30	

Run No. 2

Filter No. U 00-262
Acetone No. 13
Amount liquid lost during transport: -0-
Acetone blank volume. ml: 107
Acetone wash volume. ml: 106.2
Acetone blank concentration. mg/mg (equation 5-4):
Acetone wash blank. mg (equation 5-5):

Container Number	Weight of Particulate Collected g		
	Final Weight	Tare Weight	Weight Gain
Probe	114.0329	114.0298	.0031
Filter	.5229	.5085	.0144
Back Half			.0000
Less Acetone Blank			.0002
Weight of Particulate Matter			.0173

	Volume of Liquid Water Collected	
	Impinger Volume ml	Silica Gel Weight g
Final	500.0	286.30
Initial	200.0	250.00
Liquid Collected	300.0	36.30
Total Volume Collected	336.30	

Run No. 3

Filter No. J 00-213
Acetone No. 12
Amount liquid lost during transport: -0-
Acetone blank volume. ml: 107
Acetone wash volume. ml: 108.6
Acetone blank concentration. mg/mg (equation 5-4):
Acetone wash blank. mg (equation 5-5):

Container Number	Weight of Particulate Collected g		
	Final Weight	Tare Weight	Weight Gain
Probe	113.9762	113.9716	.0046
Filter	.4813	.4717	.0096
Back Half			.0000
Less Acetone Blank			.0002
Weight of Particulate Matter			.0140

	Volume of Liquid Water Collected	
	Impinger Volume ml	Silica Gel Weight g
Final	470.0	286.50
Initial	200.0	250.00
Liquid Collected	270.0	36.50
Total Volume Collected	306.50	

Run No. Blank

Filter No. **Blank**
Acetone No. **66**
Amount liquid lost during transport: -0-
Acetone blank volume. ml: **107**
Acetone wash volume. ml: **0**
Acetone blank concentration. mg/mg (equation 5-4):
Acetone wash blank. mg (equation 5-5):

Container Number	Weight of Particulate Collected g		
	Final Weight	Tare Weight	Weight Gain
Acetone/Blank	124.5801	124.5799	.0002
Less Acetone Blank			
Weight of Particulate Matter			.0002

N/A	Volume of Liquid Water Collected	
	Impinger Volume ml	Silica Gel Weight g
Final		
Initial		
Liquid Collected		
Total Volume Collected		

*Convert Weight of Water to Volume by Dividing Total Weight Increase by Density of Water (1g/ml **Increase.** **1g/ml** =volume of water. ml

**See Federal Register. Method 5., 5.6 & 6.7

CHAIN OF CUSTODY

Client	St. Johns River Power Park	**Laboratory**	GCI
Project No.	00-131	**Type of Sample**	5b
Plant Name	Jacksonville, FL	**Sample Location**	Unit 2 Stack

Run No.	1	Run No.	2	Run No.	3
Filter No.	275 K	Filter No.	262 U	Filter No.	213 J
Acetone No.	B9	Acetone No.	13	Acetone No.	12
Sample Recovery:		**Sample Recovery:**		**Sample Recovery:**	
By	Hal Stiles	By	Hal Stiles	By	Hal Stiles
Date	12/19/00	Date	12/19/00	Date	12/19/00
Samples Received in Laboratory:		**Samples Received in Laboratory:**		**Samples Received in Laboratory:**	
By	J. Nichols	By	J. Nichols	By	J. Nichols
Date	12/21/00	Date	12/21/00	Date	12/21/00
Samples Handled in Laboratory:		**Samples Handled in Laboratory:**		**Samples Handled in Laboratory:**	
By	J. Nichols	By	J. Nichols	By	J. Nichols
Date	12/22/00	Date	12/22/00	Date	12/22/00
Time	9:45	Time	9:45	Time	9:45
Laboratory Report Received:		**Laboratory Report Received:**		**Laboratory Report Received:**	
By	Stacy Sword	By	Stacy Sword	By	Stacy Sword
Date	1/2/01	Date	1/2/01	Date	1/2/01

Comments

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-1
Date: 12/18/00
Time: 03:50
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 18, 2000

Date received December 22, 2000

Analysis Report No. 63-33747

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.71	xxxxx		
% Ash	9.05	10.13		
Btu/lb	11613	13006	MAF	14472
% Sulfur	0.69	0.77		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-2
Date: 12/18/00
Time: 16:15
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 18, 2000

Date received December 22, 2000

Analysis Report No. 63-33748

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.53	xxxxx		
% Ash	5.91	6.61		
Btu/lb	12214	13651	MAF	14617
% Sulfur	0.72	0.81		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-3
Date: 12/18/00
Time: 23:15
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 18, 2000

Date received December 22, 2000

Analysis Report No. 63-33749

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.25	xxxxx		
% Ash	7.16	8.07		
Btu/lb	11935	13448	MAF	14629
% Sulfur	1.40	1.58		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

PARTICULATES RUN #1

8

Enertec NTDAHS®
Average Values Report
12/19/00 17:01

Company: St. Johns Unit 2
Plant:
City/St:
Source: Unit 2

Period Start: 12/19/00 08:46
Period End: 12/19/00 11:01
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2Opacity %	Average 2Unit_Load MW
12/19/00 08:46	6.7	675.8
12/19/00 08:47	5.3	675.9
12/19/00 08:48	6.7	677.3
12/19/00 08:49	6.7	678.5
12/19/00 08:50	4.9	680.7
12/19/00 08:51	5.0	682.6
12/19/00 08:52	4.9	684.1
12/19/00 08:53	4.6	684.6
12/19/00 08:54	6.0	683.5
12/19/00 08:55	5.9	682.7
12/19/00 08:56	6.7	681.0
12/19/00 08:57	6.8	679.8
12/19/00 08:58	7.6	677.6
12/19/00 08:59	4.3	677.4
12/19/00 09:00	5.8	676.5
12/19/00 09:01	8.0	676.9
12/19/00 09:02	4.5	676.6
12/19/00 09:03	4.1	677.5
12/19/00 09:04	3.7	677.0
12/19/00 09:05	4.0	675.9
12/19/00 09:06	4.3	674.4
12/19/00 09:07	5.4	675.0
12/19/00 09:08	3.9	675.3
12/19/00 09:09	4.6	676.1
12/19/00 09:10	4.8	675.6
12/19/00 09:11	4.6	676.7
12/19/00 09:12	4.1	677.1
12/19/00 09:13	5.0	678.3
12/19/00 09:14	5.4	679.7
12/19/00 09:15	4.4	678.7
12/19/00 09:16	3.8	680.3
12/19/00 09:17	4.7	679.9
12/19/00 09:18	4.0	680.7
12/19/00 09:19	4.9	680.7
12/19/00 09:20	5.0	681.9
12/19/00 09:21	4.6	682.4
12/19/00 09:22	4.3	683.8
12/19/00 09:23	4.6	682.7
12/19/00 09:24	4.4	683.1
12/19/00 09:25	4.6	681.2
12/19/00 09:26	7.1	680.5
12/19/00 09:27	7.5	679.1
12/19/00 09:28	4.2	677.9
12/19/00 09:29	4.4	678.1
12/19/00 09:30	4.4	678.3
12/19/00 09:31	4.7	679.4
12/19/00 09:32	4.9	680.6
12/19/00 09:33	4.8	681.2

12/19/00 09:34	4.4	679.3
12/19/00 09:35	5.2	679.0
12/19/00 09:36	7.2	676.9
12/19/00 09:37	4.8	678.5
12/19/00 09:38	4.9	678.2
12/19/00 09:39	7.3	679.6
12/19/00 09:40	7.3	680.0
12/19/00 09:41	6.1	680.8
12/19/00 09:42	5.6	680.9
12/19/00 09:43	4.9	681.0
12/19/00 09:44	4.7	680.6
12/19/00 09:45	5.1	680.5
12/19/00 09:46	5.1	680.4
12/19/00 09:47	5.0	680.8
12/19/00 09:48	4.9	680.3
12/19/00 09:49	5.2	680.3
12/19/00 09:50	4.8	682.1
12/19/00 09:51	5.1	682.0
12/19/00 09:52	8.6	681.3
12/19/00 09:53	5.2	680.6
12/19/00 09:54	4.4	681.8
12/19/00 09:55	4.6	681.1
12/19/00 09:56	4.7	681.8
12/19/00 09:57	5.1	682.1
12/19/00 09:58	5.4	681.9
12/19/00 09:59	6.3	681.7
12/19/00 10:00	4.8	681.6
12/19/00 10:01	6.4	681.9
12/19/00 10:02	6.6	680.9
12/19/00 10:03	4.9	681.0
12/19/00 10:04	5.8	680.5
12/19/00 10:05	9.7	681.4
12/19/00 10:06	4.9	680.9
12/19/00 10:07	4.8	681.0
12/19/00 10:08	4.5	681.3
12/19/00 10:09	4.3	682.0
12/19/00 10:10	5.0	681.3
12/19/00 10:11	5.0	680.7
12/19/00 10:12	5.0	680.2
12/19/00 10:13	4.8	678.1
12/19/00 10:14	4.7	677.1
12/19/00 10:15	5.3	676.5
12/19/00 10:16	4.6	678.5
12/19/00 10:17	6.3	679.4
12/19/00 10:18	7.4	680.7
12/19/00 10:19	4.3	681.4
12/19/00 10:20	4.1	683.2
12/19/00 10:21	4.6	682.8
12/19/00 10:22	4.6	682.6
12/19/00 10:23	4.5	682.2
12/19/00 10:24	5.6	681.1
12/19/00 10:25	6.3	681.9
12/19/00 10:26	10.6	681.5
12/19/00 10:27	6.1	682.2
12/19/00 10:28	4.8	680.2
12/19/00 10:29	5.7	680.2
12/19/00 10:30	9.6	679.1
12/19/00 10:31	5.5	679.5
12/19/00 10:32	4.4	678.8
12/19/00 10:33	4.2	679.0
12/19/00 10:34	4.2	678.8
12/19/00 10:35	4.5	681.0
12/19/00 10:36	4.7	680.9

12/19/00 10:37	5.6	682.2
12/19/00 10:38	7.2	681.2
12/19/00 10:39	5.0	680.8
12/19/00 10:40	4.6	680.5
12/19/00 10:41	5.0	679.8
12/19/00 10:42	9.6	680.2
12/19/00 10:43	7.0	680.2
12/19/00 10:44	4.9	681.5
12/19/00 10:45	4.3	681.8
12/19/00 10:46	5.2	683.0
12/19/00 10:47	4.8	682.8
12/19/00 10:48	4.4	682.4
12/19/00 10:49	4.7	681.2
12/19/00 10:50	4.8	682.7
12/19/00 10:51	4.8	682.4
12/19/00 10:52	4.7	682.8
12/19/00 10:53	5.6	683.1
12/19/00 10:54	8.1	682.8
12/19/00 10:55	10.6	682.9
12/19/00 10:56	10.3	681.8
12/19/00 10:57	4.6	681.5
12/19/00 10:58	4.6	680.8
12/19/00 10:59	4.5	681.6
12/19/00 11:00	4.9	680.7
Final Average*	**5.4**	**680.3**
Maximum*	**10.6**	**684.6**
Minimum*	**3.7**	**674.4**

*Does not include Invalid Averaging Periods ("N/A")

RUN #2 PARTICULATES

Enertec NTDAHS®
Average Values Report
12/19/00 17:03

Company: St. Johns Unit 2
Plant:
City/St:
Source: Unit 2

Period Start: 12/19/00 11:45
Period End: 12/19/00 13:54
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2Opacity %	Average 2Unit_Load MW
12/19/00 11:45	6.7	684.7
12/19/00 11:46	6.6	683.3
12/19/00 11:47	5.2	682.9
12/19/00 11:48	5.1	682.0
12/19/00 11:49	4.7	682.3
12/19/00 11:50	4.9	680.9
12/19/00 11:51	5.2	680.5
12/19/00 11:52	5.8	680.1
12/19/00 11:53	5.6	680.7
12/19/00 11:54	5.6	680.2
12/19/00 11:55	7.2	681.8
12/19/00 11:56	5.2	681.1
12/19/00 11:57	7.8	681.3
12/19/00 11:58	6.2	680.7
12/19/00 11:59	6.7	680.7
12/19/00 12:00	4.9	679.9
12/19/00 12:01	4.9	679.6
12/19/00 12:02	8.2	679.1
12/19/00 12:03	6.1	679.1
12/19/00 12:04	7.2	679.1
12/19/00 12:05	6.6	677.4
12/19/00 12:06	6.2	677.3
12/19/00 12:07	6.0	676.5
12/19/00 12:08	5.4	677.3
12/19/00 12:09	6.2	677.6
12/19/00 12:10	8.6	679.1
12/19/00 12:11	9.0	678.6
12/19/00 12:12	5.5	679.9
12/19/00 12:13	4.9	680.8
12/19/00 12:14	5.7	681.6
12/19/00 12:15	5.2	682.3
12/19/00 12:16	6.2	682.3
12/19/00 12:17	6.3	682.1
12/19/00 12:18	6.2	681.2
12/19/00 12:19	8.0	681.0
12/19/00 12:20	8.9	679.7
12/19/00 12:21	7.3	678.6
12/19/00 12:22	15.5	675.3
12/19/00 12:23	7.8	676.1
12/19/00 12:24	9.0	676.6
12/19/00 12:25	5.6	677.5
12/19/00 12:26	6.1	677.3
12/19/00 12:27	6.2	676.1
12/19/00 12:28	6.5	673.8
12/19/00 12:29	5.6	673.5
12/19/00 12:30	5.9	672.8
12/19/00 12:31	6.4	673.0
12/19/00 12:32	5.7	673.9

12/19/00 12:33	6.7	674.7
12/19/00 12:34	6.6	675.2
12/19/00 12:35	8.5	675.1
12/19/00 12:36	10.1	676.4
12/19/00 12:37	15.4	676.3
12/19/00 12:38	7.9	677.0
12/19/00 12:39	6.8	675.9
12/19/00 12:40	5.6	676.5
12/19/00 12:41	6.3	676.0
12/19/00 12:42	5.8	677.2
12/19/00 12:43	6.6	677.1
12/19/00 12:44	7.2	677.5
12/19/00 12:45	6.7	675.8
12/19/00 12:46	7.1	675.0
12/19/00 12:47	9.1	672.7
12/19/00 12:48	14.3	672.2
12/19/00 12:49	10.3	672.4
12/19/00 12:50	6.5	672.8
12/19/00 12:51	4.8	674.7
12/19/00 12:52	5.2	676.1
12/19/00 12:53	5.2	678.7
12/19/00 12:54	6.1	678.5
12/19/00 12:55	5.5	679.0
12/19/00 12:56	6.6	678.5
12/19/00 12:57	6.1	677.2
12/19/00 12:58	6.9	675.7
12/19/00 12:59	14.4	677.2
12/19/00 13:00	13.6	678.8
12/19/00 13:01	8.0	681.6
12/19/00 13:02	8.2	681.4
12/19/00 13:03	5.1	682.7
12/19/00 13:04	6.0	682.1
12/19/00 13:05	5.1	681.0
12/19/00 13:06	5.8	679.7
12/19/00 13:07	5.3	678.3
12/19/00 13:08	7.5	678.2
12/19/00 13:09	5.3	677.4
12/19/00 13:10	5.3	677.0
12/19/00 13:11	7.2	676.4
12/19/00 13:12	5.6	676.6
12/19/00 13:13	8.2	674.7
12/19/00 13:14	6.1	675.1
12/19/00 13:15	5.2	674.3
12/19/00 13:16	5.9	676.2
12/19/00 13:17	4.8	676.8
12/19/00 13:18	5.4	677.6
12/19/00 13:19	5.3	677.5
12/19/00 13:20	5.8	677.9
12/19/00 13:21	6.5	677.6
12/19/00 13:22	5.1	678.1
12/19/00 13:23	4.9	678.1
12/19/00 13:24	5.2	677.7
12/19/00 13:25	8.7	677.7
12/19/00 13:26	7.3	676.9
12/19/00 13:27	5.8	676.6
12/19/00 13:28	5.4	676.1
12/19/00 13:29	5.0	676.6
12/19/00 13:30	4.8	676.7
12/19/00 13:31	5.5	679.4
12/19/00 13:32	6.5	679.7
12/19/00 13:33	6.4	681.2
12/19/00 13:34	6.9	679.8
12/19/00 13:35	6.6	680.1

12/19/00 13:36	5.8	679.8
12/19/00 13:37	5.7	680.1
12/19/00 13:38	6.6	679.0
12/19/00 13:39	9.1	679.2
12/19/00 13:40	5.3	678.6
12/19/00 13:41	5.7	678.0
12/19/00 13:42	4.7	677.8
12/19/00 13:43	4.7	678.4
12/19/00 13:44	5.3	678.8
12/19/00 13:45	5.6	678.8
12/19/00 13:46	5.4	678.7
12/19/00 13:47	5.2	677.5
12/19/00 13:48	5.9	678.1
12/19/00 13:49	6.3	677.4
12/19/00 13:50	6.3	677.9
12/19/00 13:51	6.5	676.6
12/19/00 13:52	5.9	675.2
12/19/00 13:53	5.3	674.1
Final Average*	**6.6**	**678.0**
Maximum*	**15.5**	**684.7**
Minimum*	**4.7**	**672.2**

*Does not include Invalid Averaging Periods ("N/A")

PON #3 PARTICULATES

Enertec NTDAHS®
Average Values Report
12/19/00 18:06

Company: St. Johns Unit 2
Plant:
City/St:
Source: Unit 2

Period Start: 12/19/00 14:43
Period End: 12/19/00 16:56
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2Opacity %	Average 2Unit_Load MW
12/19/00 14:43	5.6	678.9
12/19/00 14:44	4.6	677.7
12/19/00 14:45	4.4	675.7
12/19/00 14:46	4.6	675.7
12/19/00 14:47	4.8	676.0
12/19/00 14:48	5.4	677.5
12/19/00 14:49	5.1	677.8
12/19/00 14:50	4.7	679.0
12/19/00 14:51	5.3	678.8
12/19/00 14:52	5.1	678.0
12/19/00 14:53	5.2	676.9
12/19/00 14:54	9.7	676.9
12/19/00 14:55	6.3	676.6
12/19/00 14:56	4.7	677.7
12/19/00 14:57	4.5	677.5
12/19/00 14:58	4.4	677.2
12/19/00 14:59	4.4	678.0
12/19/00 15:00	5.1	678.2
12/19/00 15:01	4.9	678.7
12/19/00 15:02	5.5	679.0
12/19/00 15:03	5.0	680.2
12/19/00 15:04	5.7	679.9
12/19/00 15:05	5.6	679.3
12/19/00 15:06	5.8	677.1
12/19/00 15:07	5.1	678.3
12/19/00 15:08	5.0	677.6
12/19/00 15:09	5.0	678.7
12/19/00 15:10	4.8	678.4
12/19/00 15:11	4.6	678.6
12/19/00 15:12	4.8	678.2
12/19/00 15:13	5.3	678.3
12/19/00 15:14	5.4	677.5
12/19/00 15:15	5.1	677.3
12/19/00 15:16	4.9	678.4
12/19/00 15:17	5.3	677.7
12/19/00 15:18	6.0	677.5
12/19/00 15:19	9.4	676.8
12/19/00 15:20	8.6	677.9
12/19/00 15:21	5.1	677.3
12/19/00 15:22	4.7	677.3
12/19/00 15:23	4.4	675.8
12/19/00 15:24	4.7	677.1
12/19/00 15:25	5.0	677.4
12/19/00 15:26	4.7	678.5
12/19/00 15:27	5.8	677.9
12/19/00 15:28	4.4	679.1
12/19/00 15:29	5.3	679.3
12/19/00 15:30	6.1	681.3

12/19/00 15:31	8.7	681.3
12/19/00 15:32	5.1	679.7
12/19/00 15:33	7.0	677.4
12/19/00 15:34	5.4	677.2
12/19/00 15:35	4.9	675.3
12/19/00 15:36	4.2	675.3
12/19/00 15:37	4.3	675.3
12/19/00 15:38	5.0	675.1
12/19/00 15:39	6.0	676.1
12/19/00 15:40	5.1	676.6
12/19/00 15:41	5.0	678.3
12/19/00 15:42	5.4	678.1
12/19/00 15:43	5.2	677.2
12/19/00 15:44	6.8	676.5
12/19/00 15:45	6.3	676.1
12/19/00 15:46	6.9	675.3
12/19/00 15:47	5.0	676.8
12/19/00 15:48	4.5	677.8
12/19/00 15:49	4.9	679.4
12/19/00 15:50	5.7	678.8
12/19/00 15:51	6.0	679.4
12/19/00 15:52	5.1	679.4
12/19/00 15:53	5.4	680.2
12/19/00 15:54	5.0	678.0
12/19/00 15:55	4.6	677.0
12/19/00 15:56	7.1	675.7
12/19/00 15:57	7.9	676.3
12/19/00 15:58	5.5	676.1
12/19/00 15:59	N/A	676.5
12/19/00 16:00	N/A	677.0
12/19/00 16:01	N/A	678.0
12/19/00 16:02	N/A	678.0
12/19/00 16:03	N/A	677.4
12/19/00 16:04	N/A	677.3
12/19/00 16:05	N/A	677.8
12/19/00 16:06	N/A	679.1
12/19/00 16:07	5.1	679.4
12/19/00 16:08	5.4	679.5
12/19/00 16:09	6.8	679.7
12/19/00 16:10	6.9	681.0
12/19/00 16:11	5.1	681.0
12/19/00 16:12	5.0	681.1
12/19/00 16:13	4.4	679.3
12/19/00 16:14	4.4	679.6
12/19/00 16:15	5.0	678.7
12/19/00 16:16	5.4	678.9
12/19/00 16:17	5.4	677.4
12/19/00 16:18	5.6	677.5
12/19/00 16:19	4.9	677.1
12/19/00 16:20	5.9	677.3
12/19/00 16:21	5.9	675.6
12/19/00 16:22	5.6	677.0
12/19/00 16:23	5.3	677.4
12/19/00 16:24	5.4	678.1
12/19/00 16:25	5.1	678.0
12/19/00 16:26	4.8	679.0
12/19/00 16:27	4.6	680.1
12/19/00 16:28	5.0	680.2
12/19/00 16:29	5.0	679.9
12/19/00 16:30	4.9	679.1
12/19/00 16:31	4.9	680.1
12/19/00 16:32	6.9	679.4
12/19/00 16:33	5.8	679.6

12/19/00 16:34	5.8	678.9
12/19/00 16:35	8.7	680.5
12/19/00 16:36	5.7	682.2
12/19/00 16:37	6.1	681.8
12/19/00 16:38	4.9	679.9
12/19/00 16:39	4.6	679.9
12/19/00 16:40	4.7	678.6
12/19/00 16:41	5.5	678.3
12/19/00 16:42	4.8	676.2
12/19/00 16:43	5.4	675.3
12/19/00 16:44	5.8	675.8
12/19/00 16:45	6.8	675.5
12/19/00 16:46	5.3	674.8
12/19/00 16:47	5.7	674.9
12/19/00 16:48	5.8	676.5
12/19/00 16:49	5.5	678.3
12/19/00 16:50	5.2	679.9
12/19/00 16:51	5.1	679.7
12/19/00 16:52	4.8	680.8
12/19/00 16:53	5.5	680.9
12/19/00 16:54	5.1	680.0
12/19/00 16:55	5.0	679.1
Final Average*	**5.4**	**678.1**
Maximum*	**9.7**	**682.2**
Minimum*	**4.2**	**674.8**

*Does not include Invalid Averaging Periods ("N/A")

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA
UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		0800	0830	0900	0930	1000	1030
Steam Flow	Lb/Hr x 10^6	4.81	4.81	4.81	4.80	4.82	4.81
Air Flow	%	63.5	63.5	63.5	63.5	63.5	63.5
Generator Load (Gross)	Megawatts	678	681	683	684	684	682
Boiler Themal Demand	Megawatts	689	689	689	689	689	689
O2 Flue gas	%	2.71	2.69	2.8	2.8	2.76	2.78
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45	45
C		45.5	45.5	46	46	45.5	45.7
D		O/S	O/S	O/S	O/S	O/S	O/S
E		42.5	42.5	42.5	43	43	43
F		45.3	45.2	45	45	45.1	45.3
G		40.5	41	40.5	40.5	40.7	40.7

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA

UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		1100	1130	1200	1230	1300	1330
Steam Flow	Lb/Hr x 10^6	4.81	4.81	4.81	4.78	4.82	4.81
Air Flow	%	63.5	63.5	63.5	63.7	63.7	63.7
Generator Load (Gross)	Megawatts	682	685	682	676	685	683
Boiler Themal Demand	Megawatts	689	690	689	689	690	689
O2 Flue gas	%	2.84	2.72	2.81	2.81	2.8	2.77
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45.1	94.5
C		45.5	45.7	45.7	45.5	45.9	45.8
D		0/s	0/s	0/s	0/s	0/s	0/s
E		43	43	43	43	43	43
F		45	45.2	45.2	45.3	45.3	45.4
G		40.7	40.6	40.6	40.7	40.8	40.6

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA

UNIT # 2 **DATE:** 12-15-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		1400	1430	1500	1530	1600	1630
Steam Flow	Lb/Hr x 10^6	4.79	4.78	4.8	4.81	4.8	4.81
Air Flow	%	63.7	63.7	63.7	64	64	64
Generator Load (Gross)	Megawatts	682	680	682	684	690	689
Boiler Themal Demand	Megawatts	689	688	689	688	680	682
O2 Flue gas	%	2.76	2.86	2.75	2.5	2.82	2.77
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45.4	45	45
C		46	45.8	45.8	45.7	46	45.7
D		O/S	O/S	O/S	O/S	O/S	O/S
E		43	43	43	43	43	43
F		45.7	45.2	45	45	45	45
G		40.6	40.7	40	39.5	39.7	39.5

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA
UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		~~mdt~~	~~mdt~~	EA	EA	EA	EA
Time		1700	1730	1800	1830	1900	1930
Steam Flow	Lb/Hr x 10^6	4.8	4.81	4.79	4.79	4.80	4.81
Air Flow	%	63.7	63.9	64	64	63	63.7
Generator Load (Gross)	Megawatts	682	682	679	682	681	683
Boiler Thermal Demand	Megawatts	689	689	689	689	689	689
O2 Flue gas	%	2.68	2.71	2.80	2.70	2.75	2.7
Fuel Flow	%	103.8	103.8	103.79	103.79	103.79	103.79
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45	45
C		45.6	46	46	45.5	45.5	45.5
D		0/3	0/3	0/3	0/3	0/3	0/3
E		43	42.5	43	43	43	43
F		45.2	45.4	45	45	45.5	45.4
G		39.5	39.5	39.5	39.5	39.5	39.1

ST. JOHNS RIVER POWER PARK
FLUE GAS DESULFURIZATION
OPERATIONAL PARAMETERS

Date: 12/19/00

UNIT # ~~1~~ 2

Initials: LCS

HOUR	PACKING DIFFERENTIAL PRESSURE (inches H2O column) A	B	C
0000			
0100			
0200			
0300			
0400			
0500			
0600			
0700			
0800	4.9	4.1	
0900	4.9	4.1	
1000	5.0	4.2	
1100	5.0	4.2	
1200	5.0	4.2	
1300	5.0	4.1	
1400	5.0	4.1	
1500	4.9	4.1	
1600	5.0	4.1	
1700	5.0	4.2	
1800	5.0	4.2	
1900	5.0	4.2	
2000			
2100			
2200			
2300			

Daily Water System Use: _____ (Total Gallons) / 1440 (min/day) = _____ GPM

COMMENTS: _____

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 08:00
Date: 12/4/00
Initials: R. R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
OS 11						
12	20.0	12	38.8	51.0	0	
13	36	10	2.1	43.0	0	
14	203	12	40.8	51	0	
15	222	12	43.4	47	0	
OS 16	180	10	38.7	39	0	
OS 21						
OS 22						
23	190	10	38.7	39	0	
OS 24						
25	209	15	39.8	67	0	
26	226	15	41.9	67	0	
31	170	6.0	37.5	23	0	
32	214	15	40.0	67	0	
OS 33	2					
34	210	15	39.9	67	0	
35	211	15	40.5	67	0	
36	208	15	41.9	67	0	
41	192	19	39.8	79	0	
42	199	20	34.7	79	0	
43	211	43	41.7	77	0	
44	195	20	38.6	83	0	
45	200	20	40.5	67	0	
46	192	20	38.4	83	0	
51	248	30	43.7	134	0	
52	231	30	41.9	130	0	
53	236	30	42.0	134	0	
54	215	30	39.0	126	0	
55	224	30	40.7	134	0	
OS 56	244	35	43.3	168	0	
61	242	35	42.3	168	0	
62	242	35	42.3	158	0	
63	252	35	38	162	0	
64	219	35	40.5	158	0	
65	226	35	38.3	158	0	
66	225	35	41.0	154	0	
71	301	45	44.2	213	0	
72	243	45	40.5	217	0	
73	306	45	42.4	217	0	
74	162	18	33.0	71.0	0	
75	255	45	41.9	217	0	
76	282	45	41.8	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 08:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	196	12	38	47	0	
12	200	12	39.8	47	0	
O/S 13						
14	205	12	36.1	51	0	
15	205	12	41.0	47	0	
O/S 16						
21	204	15	38.1	63	0	
22	205	15	38.6	67	0	
O/S 23						
24	225	15	41.6	63	0	
25	219	16	42.8	67	0	
26	225	15	41.7	63	0	
31	204	15	39.4	63	0	
32	211	15	46.0	61	0	
33	198	10	40.3	43	0	
34	215	15	41.4	63	0	
35	216	15	41.6	67	0	
36	227	15	41.8	63	0	
41	189	20	36.4	79	0	
42	201	20	41.0	79	0	
43	215	20	42.3	79	0	
44	205	20	41.9	79	0	
45	211	20	41.5	79	0	
46	208	20	41.2	79	0	
51	201	30	36.7	130	0	
52	214	30	37.8	134	0	
O/S 53						
54	249	31	44.8	134	0	
55	249	30	44.1	134	0	
56	119	19	33.0	71.0	0	
61	204	35	35.6	158	0	
62	221	35	37.2	162	0	
63	248	35	43.9	162	0	
64	246	35	42.6	166	0	
65	248	35	44.4	162	0	
66	239	35	45.5	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	219	0	
73	238	45	43.1	201	0	
74	254	45	41.0	213	0	
75	295	45	41.8	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # ____

Time: 09:00
Date: 12/19/00
Initials: R. A.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
O/S 11						
12	200	12	38.9	51	0	
13	45.0	9	10	27		
14	205	12	40.9	55	0	
15	32	7	6.6	55	0	
O/S 16						
O/S 21						
O/S 22						
23	191	10	38.8	39	0	
O/S 24						
25	211	15	40.1	67	0	
26	226	15	41.9	67	0	
31	170	6	37.3	27	0	
32	213	15	40.1	67	0	
O/S 33						
34	220	15	41.4	67	0	
35	212	15	40.7	67	0	
36	209	15	40.2	67	0	
41	209	20	41.4	83	0	
42	200	20	34.9	83	0	
43	218	20	42.9	78	0	
44	197	20	39.1	83	0	
45	202	20	39.3	83	0	
46	194	20	38.8	83	0	
51	256	30	44.1	134	0	
52	232	30	42.3	130	0	
53	239	30	42.5	132	0	
54	219	30	39.5	130	0	
55	222	30	40.7	134	0	
O/S 56						
61	246	35	42.8	162	0	
62	244	35	42.7	158	0	
63	254	35	383	162	0	
64	222	35	40.8	158	0	
65	228	35	38.5	158	0	
66	228	35	41.7	154	0	
71	306	45	44.8	217	0	
72	246	45	40.8	219		
73	309	45	42.7	213		
74	164	18	33.2	71		
75	256	45	38.5	158		
76	296	45	42.2	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 09:00
Date: 12/14/10
Initials: R.R

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	252	21	42.8	98		
12	257	22	44.8	102		
13						
14	207	12	36.4	55		
15	204	12	40.8	47		
16						
21	258	25	43.1	122		
22	326	27	47.3	134		
23						
24	228	15	41.6	61.0		
25	218	15	43.0	63.0		
26	224	15	41.6	63.0		
31	303	25	45.9	118		
32	331	27	47.6	130		
33	239	18	43.1	86.0		
34	215	15	41.1	63.0		
35	219	15	41.7	67.0		
36	226	15	41.8	63.0		
41	261	36	44.1	166		
42	318	36	48.3	162		
43	332	36	48.4	166		
44	204	20	41.8	78.0		
45	211	20	41.7	67.0		
46	208	20	41.2	83.0		
51	252	45	41.9	217		
52	303	45	42.4	217		
53						
54	248	30	45.1	134		
55	249	30	44.2	134		
56	214	18	44.2	73		
61	234	45	38.7	213		
62	251	45	39.8	217		
63	324	45	46.7	217		
64	246	35	42.8	166		
65	247	35	44.8	158		
66	242	35	45.8	154		
71	217	45	36.6	217		
72	234	45	37.5	217		
73	237	45	43.0	201		
74	254	45	41.0	209		
75	296	45	41.9	217		
76	321	45	44.4	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 10:00
Date: 12/19/00
Initials: A.R

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11						
12	200	12	39.1	49	0	
13	40	10	2.3	43	0	
14	204	12	40.8	55	0	
15	227	12	43.6	47	0	
O/S 16						
O/S 21						
O/S 22						
23	191	10	38.7	39	0	
O/S 24						
25	209	15	39.8	67	0	
26	226	15	42.0	67	0	
31	167	6	37.1	19	0	
32	212	15	39.7	67	0	
O/S 33						
34	214	15	40.8	67	0	
35	210	15	40.3	67	0	
36	214	15	40.2	67	0	
41	207	20	41.1	79	0	
42	197	20	34.4	77	0	
43	217	20	42.6	79	0	
44	195	20	38.8	83	0	
45	202	20	39.4	79	0	
46	193	20	38.6	83	0	
51	249	30	43.9	134	0	
52	231	30	42.0	130	0	
53	238	30	42.3	130	0	
54	218	30	39.4	130	0	
55	225	30	40.8	134	0	
O/S 56						
61	244	35	42.5	162	0	
62	242	35	42.3	154	0	
63	253	35	38.2	162	0	
64	220	35	40.5	158	0	
65	228	35	38.3	158	0	
66	228	35	41.6	154	0	
71	305	45	44.6	217	0	
72	246	45	40.8	219	0	
73	309	45	42.7	215	0	
74	163	18	33.1	71.	0	
75	256	45	42.1	217	0	
76	295	45	42.1	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # ____

Time: 10.00
Date: 12/14/00
Initials: A.R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.6	47	0	
12	202	12	40.2	51	0	
13 OL						
14	205	12	36.1	51	0	
15	201	12	40.5	47	0	
OL 16	~~205~~	~~15~~	~~37.7~~	~~69~~	~~0~~	
21	202	15	37.7	67	0	
22	203	15	38.3	67	0	
OL 23	2[illegible]					
24	220	15	41.4	63	0	
25	219	16	42.8	67	0	
26	224	15	41.6	59	0	
31	204	15	39.4	67	0	
32	212	15	40.0	59	0	
33	197	10	40.0	43	0	
34	212	15	40.8	63	0	
35	218	15	41.6	67	0	
36	225	15	41.5	63	0	
41	189	20	36.4	83	0	
42	201	20	41.1	79	0	
43	214	20	42.3	81	0	
44	204	20	41.7	79	0	
45	212	20	41.6	67	0	
46	209	20	41.3	79	0	
51	200	30	36.6	130	0	
52	215	30	37.9	134	0	
OL 53	~~245~~	~~30~~	~~44.8~~	~~130~~	~~0~~	
54	245	30	44.8	130	0	
55	249	30	44.5	134	0	
56	108	6	25.8	27	0	
61	204	35	35.6	158	0	
62	220	35	37.1	158	0	
63	247	35	43.7	162	0	
64	246	35	42.6	166	0	
65	247	35	44.4	158	0	
66	239	35	45.3	164	0	
71	217	45	36.6	217		
72	234	45	37.6	217		
73	239	45	43.3	205		
74	254	45	48.5	247		
75	294	45	41.7	217		
76	321	45	44.4	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 11:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
Of 11						
12	198	12	38.6	47	0	
13	48	8	9.3	23	0	
14	204	12	40.8	51	0	
15	217	12	42.3	47	0	
Of 16						
Of 21						
Of 22						
23	190	10	38.7	39	0	
Of 24						
25	212	15.0	41.1	71	0	
26	226	15.0	41.8	67	0	
31	167	6.0	36.5	19	0	
32	217	15	40.3	67	0	
Of 33	~~216~~	~~15~~	~~41.2~~	~~67~~	0	
34	216	15	41.2	67	0	
35	214	16	40.7	71	0	
36	212	15	40.1	67	0	
41	208	20	41.2	83	0	
42	200	20	34.8	79	0	
43	215	20	42.5	79	0	
44	196	20	39	83	0	
45	202	20	39.3	83	0	
46	193	20	38.5	79	0	
51	249	30	43.9	124	0	
52	231	20	42.1	130	0	
53	238	30	42.5	79	0	
54	217	30	39.4	126	0	
55	223	30	40.6	134	0	
Of 56	~~246~~	~~25~~	~~43.9~~	~~142~~	0	
61	246	35	42.7	162	0	
62	242	35	42.3	158	0	
63	254	35	38.2	162	0	
64	220	35	33.2	71.0	0	
65	226	35	38.3	158	0	
66	228	35	41.7	154	0	
71	304	45	44.5	217	0	
72	246	45	40.8	221	0	
73	307	45	42.6	213	0	
74	164	18	33.2	71.0	0	
75	256	45	42.1	217	0	
76	294	45	42.0	213	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 10.00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
11	198	12	38.3	47	0	
12	198	12	39.4	47		
13	~~203~~	~~12~~	~~35.6~~	~~55~~	0	
14	203	12	35.6	55	0	
15	201	12.0	40.7	47	0	
16	~~204~~	~~15~~	~~38.0~~	~~67~~	0	
21	204	15	38.0	67	0	
22	205	15	38.5	67	0	
23	~~212~~	~~15~~	~~40.0~~	~~63~~	0	
24	221	15	41.3	63	0	
25	214	15	42.6	67	0	
26	225	15	41.2	63	0	
31	204	15	39.4	67	0	
32	212	15	46.0	63	0	
33	195	10	39.8	43	0	
34	215	15	41.2	63	0	
35	215	15	67	41.3	0	
36	229	15	42.3	63	0	
41	189	20	36.5	83	0	
42	201	20	41.1	79	0	
43	214	20	42.2	79	0	
44	204	20	41.7	79	0	
45	212	20	41.5	79	0	
46	209	20	41.2	83	0	
51	202	30	36.9	134	0	
52	215	30	38.0	134	0	
53						
54	246	30	44.8	130	0	
55	249	30	44.1	134	0	
56	212	18	43.9	71.0	0	
61	204	35	35.6	158	0	
62	221	35	37.1	162	0	
63	248	35	44.1	158	0	
64	246	35	42.6	169	0	
65	248	35	44.4	158	0	
66	279	35	45.4	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	212	0	
73	237	45	43.0	201	0	
74	252	45	40.8	209	0	
75	294	45	41.8	217	0	
76	321	45	44.4	212	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 12:00
Date: 12/19/00
Initials: R. R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11						
12	196	12.0	38.4	47	0	
13	46	1.0	2.9	43	0	
14	204	12	40.8	51.0	0	
15	219	12	42.8	47.0	0	
O/S 16						
O/S 21						
O/S 22						
23	188	10	38.3	43		
O/S 24						
25	209	15	40.8	67		
26	225	15	41.8	67		
31	168	6.0	36.9	23		
32	213	15	40.3	67		
O/S 33						
34	215	15	41.1	67		
35	211	15	40.4	67		
36	214	15	40.3	67		
41	208	20	41.2	83		
42	199	20	34.8	79		
43	216	20	42.6	75		
44	197	20	39.1	83		
45	202	20	39.3	83		
46	192	20	38.3	83		
51	248	30	43.7	134		
52	236	30	42.0	130		
53	239	30	42.4	134		
54	217	30	39.4	126		
55	223	30	40.7	134		
O/S 56						
61	245	35	42.6	158		
62	242	35	42.3	156		
63	254	35	38.3	162		
64	221	35	40.6	158		
65	228	35	38.5	158		
66	229	35	41.8	154		
71	305	45	44.6	217		
72	245	45	40.8	217		
73	307	45	42.7	213		
74	165	18	33.1	71		
75	256	45	42.2	217		
76	255	45	42.1	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 12:00
Date: 12/19/00
Initials: M.R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
11	193	12	37.6	47	0	
12	198	12	39.4	47	0	
13						
14	204	12	35.9	51	0	
15	202	12	40.5	47	0	
16						
21	203	15	38.0	63	0	
22	203	15	38.3	67	0	
23						
24	220	15	41.2	63	0	
25	214	15	42.5	67	0	
26	224	15	41.7	63	0	
31	205	15	39.5	61	0	
32	215	15	40.2	63	0	
33	195	10	40.0	43	0	
34	212	15	40.7	63	0	
35	217	15	41.6	67	0	
36	226	15	41.7	63	0	
41	190	20	36.7	83	0	
42	202	20	41.2	79	0	
43	214	20	42.0	79	0	
44	202	20	41.6	75	0	
45	211	20	41.4	79	0	
46	207	20	41.1	83	0	
51	201	30	36.7	130	0	
52	215	30	38.0	134	0	
53	~~248~~	~~31~~	~~44.8~~	~~134~~	~~0~~	
54	248	31	44.8	134	0	
55	249	30	44.2	134	0	
56	146	8.0	29.3	31.0	0	
61	205	35	35.7	158	0	
62	221	35	37.1	162	0	
63	248	35	43.7	162	0	
64	246	35	42.7	166	0	
65	247	35	44.4	158	0	
66	241	35	45.9	154	0	
71	216	45	36.5	213	0	
72	230	45	37.4	217	0	
73	237	45	43.1	203	0	
74	253	45	40.8	205	0	
75	294	45	41.8	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 13:00
Date: __/__/__
Initials: _____

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
O/S 11	215	12	41.6	51	0	
12	193	12	38.0	47	0	
13	63	6	23.2	11.2	113	
14	203	12	40.9	51	0	
15	47	8	42	47	111	
O/S 16						
O/S 21						
O/S 22						
23	188	10	38.2	39	0	
O/S 24						
25	207	15	40.1	67	0	
26	226	15	41.8	67	0	
31	165	6	36.9	23	0	
32	214	15	39.6	67	0	
33	219	15	41.7	67	0	
34	221	15	41.5	67	0	
35	213	15	40.3	67	0	
36	215	15	40.1	63	0	
41	207	20	41.0	83	0	
42	199	20	35.1	79	0	
43	217	20	42.6	79	0	
44	197	20	39.1	83	0	
45	203	20	39.4	79	0	
46	195	20	38.7	83	0	
51	247	30	43.7	134	0	
52	233	30	42.3	130	0	
53	240	30	42.6	134	0	
54	217	30	39.4	126	0	
55	224	30	40.7	134	0	
O/S 56	212	28	40.9	130	0	
61	248	35	42.9	162	0	
62	243	35	42.6	158	0	
63	253	35	38.2	162	0	
64	221	35	40.6	158	0	
65	226	35	38.3	158	0	
66	229	35	41.8	154	0	
71	305	45	44.7	217	0	
72	246	45	40.8	217	0	
73	307	45	42.6	213	0	
74	164	18	33.0	161	0	
75	256	45	42.1	217	0	
76	294	45	42.1	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 13:00
Date: __/__/__
Initials: _____

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.1	45	0	
12	195	12	39.2	47	0	
0/S 13	201	12	35.5	51	0	
14	208	12	39.5	57	0	
15	201	12	40.3	47	0	
0/S 16						
21	202	15	37.7	67	0	
22	203	15	38.3	67	0	
23	221	14	43.0	63	0	
24	223	15	41.5	61	0	
25	218	15	42.6	63	0	
26	220	15	41.1	59	0	
31	205	15	39.6	63	0	
32	215	15	40.3	63	0	
33	193	10	39.7	43	0	
34	215	15	41.2	63	0	
35	218	15	41.6	67	0	
36	228	15	41.2	63	0	
41	191	20	36.7	83	0	
42	201	20	41.3	79	0	
43	215	20	42.3	83	0	
44	205	20	41.9	79	0	
45	213	20	41.7	79	0	
46	211	20	40.9	79	0	
51	204	30	37.0	130	0	
52	216	30	38.0	134	0	
53 0/S	247	30	45.2	130	0	
54	252	30	44.5	134		
55	248	30	45.1	134	0	
56	215	6	44.6	71	0	
61	207	35	35.9	162	0	
62	221	35	37.3	162	0	
63	249	35	44.1	162	0	
64	247	35	42.8	166	0	
65	248	35	44.5	158	0	
66	242	35	45.8	154	0	
71	216	45	36.5	213	0	
72	233	45	37.5	217	0	
73	237	45	43.3	201	0	
74	253	45	41.0	209	0	
75	297	45	41.9	217	0	
76	323	45	44.6	215	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 14:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
OS 11						
12	195	12	38.0	47	0	
13	58	6	14.0	43	109	
14	202	12	41.6	51	0	
15	224	12	42.2	47	88	
OS 16						
OS 21						
OS 22						
23	190	10	38.2	39	0	
OS 24						
25	207	15	40.3	67	0	
26	227	15	41.6	67	0	
31	165	6	36.9	23	0	
32	214	15	40.1	71	0	
OS 33						
34	217	15	41.3	67	0	
35	209	15	40.1	67	0	
36	211	15	40.2	67	0	
41	207	21	42.4	83	1	
42	201	20	35.1	79	0	
43	215	20	42.6	79	0	
44	197	20	39.2	83	0	
45	202	20	39.4	79	0	
46	193	20	38.6	83	0	
51	249	30	43.7	134	0	
52	234	30	42.4	130	0	
53	239	30	42.6	134	0	
54	219	30	39.6	130	0	
55	225	30	40.9	134	0	
OS 56	~~240~~	~~35~~	~~42.8~~	~~162~~	~~0~~	
61	247	35	42.9	162	0	
62	244	35	42.6	158	0	
63	254	35	38.3	162	0	
64	221	35	40.6	158	0	
65	228	35	38.5	156	0	
66	231	35	42.1	154	0	
71	307	45	44.8	217	0	
72	246	45	40.8	217	0	
73	309	45	42.8	213	0	
74	163	18	33.1	71	0	
75	257	45	42.1	217	0	
76	295	45	42.2	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 14:00
Date: 12/19/00
Initials: R.R

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	192	12	37.3	47	0	
12	195	12	39.1	47	0	
0/S 13						
14	202	12	35.5	55	0	
15	200	12	40.1	47	0	
0/S 16						
21	204	15	38.0	67	0	
22	204	15	38.4	67	0	
0/S 23						
24	220	15	41.5	63	0	
25	217	15	42.6	67	0	
26	221	15	41.1	63	0	
31	205	15	39.5	63	0	
32	215	15	40.3	63	0	
33	192	10	39.9	43	0	
34	215	15	40.9	63	0	
35	217	15	41.6	67	0	
36	225	15	41.9	63	0	
41	191	20	36.6	83	0	
42	202	20	41.1	79	0	
43	214	20	42.1	79	0	
44	205	20	41.9	79	0	
45	213	20	41.7	79	0	
46	209	20	41.4	83	0	
51	298	30	36.9	130	0	
52	215	30	38.0	134	0	
0/S 53						
54	252	30	45.1	134	0	
55	251	30	44.4	134	0	
56	214	18	44.4	71	2	
61	205	35	35.7	158	0	
62	221	35	37.2	158	0	
63	249	35	44.1	162	0	
64	246	35	42.8	169	0	
65	247	35	44.5	158	0	
66	242	35	45.8	150	0	
71	215	45	36.5	213	0	
72	234	45	35.7	217	0	
73	238	45	43.1	201	0	
74	255	45	41.1	213	0	
75	296	45	41.9	217	0	
76	322	45	44.6	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 15:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
O/S 11						
12	195	12	38.6	47	0	
13	52	12	8.3	35	108	
14	203	12	40.5	53	0	
15	217	12	41.9	47	107	
O/S 16						
O/S 21						
O/S 22						
23	188	10	37.6	43	0	
O/S 24						
25	207	15	40.3	67	0	
26	225	15	42.2	67	0	
31	167	6	36.8	23	0	
32	215	15	40.4	67	0	
O/S 33						
34	218	15	41.3	67	0	
35	209	15	40.4	71	0	
36	211	15	40.3	63	0	
41	207	20	41.0	79	0	
42	199	20	34.8	79	0	
43	215	20	42.3	79	0	
44	197	20	39.1	83	0	
45	202	20	39.3	83	0	
46	193	20	38.4	79	0	
51	247	30	43.6	134	0	
52	232	30	42.2	130	0	
53	239	30	42.6	130	0	
54	218	30	39.4	130	0	
55	225	30	40.9	134	0	
O/S 56						
61	246	35	42.8	102	0	
62	244	35	42.6	158	0	
63	254	35	38.2	162	0	
64	220	35	40.6	158	0	
65	228	35	38.4	162	0	
66	231	35	42.1	154	0	
71	306	45	44.8	217	0	
72	246	45	40.8	217	0	
73	308	45	42.8	213	0	
74	161	18	33.1	75	0	
75	256	45	42.1	217	0	
76	296	45	42.2	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 15:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	191	12	37.3	47	0	
12	198	12	39.0	47	0	
O/S 13						
14	201	12	35.4	55	0	
15	200	12	40.3	47	0	
16	211	12	41.6	51	0	
21	202	15	37.8	63	0	
22	202	15	38.1	67	0	
O/S 23	7					
24	222	15	41.5	63	0	
25	215	15	42.3	71	0	
26	220	15	41.2	63	0	
31	204	15	39.5	63	0	
32	214	15	46.2	63	0	
33	195	10	39.4	43	0	
34	217	15	41.5	63	0	
35	219	15	41.5	67	0	
36	226	15	41.8	67	0	
41	199	20	41.9	79	0	
42	202	20	41.2	79	0	
43	217	20	41.9	83	0	
44	204	20	41.9	79	0	
45	212	20	41.6	79	0	
46	208	20	41.2	83	0	
51	202	30	36.9	130	0	
52	215	30	38.0	134	0	
O/S 53	~~247~~	~~31~~	~~45.1~~	~~134~~	~~0~~	
54	247	31	45.1	134	0	
55	251	30	44.3	134	0	
56	106	7	44.4	71	0	
61	204	35	35.8	158	0	
62	221	35	37.2	162	0	
63	248	35	43.8	158	0	
64	246	35	42.8	166	0	
65	248	35	44.4	158	0	
66	242	35	45.9	154	0	
71	217	45	36.6	217	0	
72	234	45	37.6	217	0	
73	238	45	43.3	203	0	
74	255	45	41.1	209	0	
75	296	45	41.9	217	0	
76	323	45	44.5	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 16.00
Date: 12/19/00
Initials: R.R

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
O/S 11						
12	198	12	38.5	51	0	
13	43	9	7.1	19	111	
14	202	12	41.2	51	0	
15	219	12	4.8	48	87	
O/S 16						
O/S 21						
O/S 22						
23	189	10	38.6	39	0	
O/S 24						
25	208	15	39.9	67	0	
26	225	15	41.6	67	0	
31	165	6	36.8	19	0	
32	212	15	40.0	67	0	
O/S 33						
34	217	15	41.2	67	0	
35	209	15	40.0	71	0	
36	213	16	40.1	63	0	
41	208	20	41.0	83.0	0	
42	199	20	34.7	83	0	
43	217	20	42.6	79	0	
44	197	20	39.1	83	0	
45	201	20	39.3	83	0	
46	193	20	38.4	83	0	
51	247	30	43.7	134	0	
52	231	30	42.2	130	0	
53	240	30	42.6	134	0	
54	216	35	42.8	162	0	
55	224	30	40.8	134	0	
O/S 56						
61	246	35	42.8	162	0	
62	244	35	42.6	158	0	
63	254	35	38.2	162	0	
64	221	35	40.6	158	0	
65	228	35	38.4	158	0	
66	271	35	42.0	154	0	
71	307	45	44.8	213	0	
72	246	45	40.8	217	0	
73	309	45	42.8	213	0	
74	161	18	33.0	71	0	
75	256	45	42.1	217	0	
76	295	45	42.2	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 16.00
Date: 12/19/00
Initials: R. R

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.4	47	0	
12	195	12	39.0	47	0	
13						
14	201	12	35.6	51	0	
15	199	12	40.0	47	0	
16						
21	202	15	37.6	67	0	
22	204	15	38.3	67	0	
23						
24	217	15	42.6	67	0	
25	218	15	41.4	65	0	
26	224	15	41.6	63	0	
31	204	15	39.5	63	0	
32	212	15	40.1	59	0	
33	194	10	39.7	43	0	
34	215	15	41.3	63	0	
35	216	15	41.4	67	0	
36	224	15	41.5	63	0	
41	190	20	36.5	83	0	
42	202	20	41.2	79	0	
43	215	20	42.6	79	0	
44	204	20	41.7	79	0	
45	213	20	41.6	79	0	
46	209	20	41.3	79	0	
51	202	30	36.9	130	0	
52	215	30	38	130	0	
53	2					
54	246	30	45	130	0	
55	250	30	44.3	134	0	
56	214	18	44	71	0	
61	205	35	35.7	158	0	
62	224	35	37.2	158	0	
63	248	35	43.5	158	0	
64	246	35	42.7	166	0	
65	248	35	44.5	158	0	
66	241	35	45.8	154	0	
71	217	45	36.5	213	0	
72	234	45	37.6	217	0	
73	238	45	43.2	203	0	
74	255	45	41.0	213	0	
75	246	45	41.9	217	0	
76	322	45	43.5	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # ____

Time: 1700
Date: 12/A/00
Initials: R.R

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
11	-					
12	215	12	41.6	51	0	
13	197	12	38.3	51	0	
14	202	12	41.4	51	0	
15	211	12	41.5	51	0	
16						
21						
22						
23	188	10	38.7	39	0	
24						
25	208	15	40.3	67	0	
26	225	15	41.8	67	0	
31	165	6	36.6	28	0	
32	217	15	40.4	63	0	
33						
34	218	15	41.2	67	0	
35	209	15	40.3	67	0	
36	212	15	40.0	67	0	
41	207	20	41.4	79	0	
42	200	20	34.8	83	0	
43	215	20	42.5	79	0	
44	196	20	39.1	83	0	
45	202	20	39.3	79	0	
46	193	20	38.5	83	0	
51	247	30	43.7	134	0	
52	231	30	42.1	130	0	
53	239	30	42.5	134	0	
54	217	30	39.4	108	0	
55	222	30	40.6	134	0	
56						
61	246	35	42.7	162	0	
62	244	35	42.6	162	0	
63	254	35	38.3	162	0	
64	222	35	40.8	158	0	
65	226	35	38.3	154	0	
66	231	35	41.4	154	0	
71	307	45	44.8	217	0	
72	245	45	40.8	217	0	
73	309	45	42.8	217	0	
74	164	18	33.1	71	0	
75	257	45	42.1	217	0	
76	296	45	423	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 17:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.1	47	0	
12	198	12	39.1	47	0	
13						
14	201	12	35.5	51	6	
15	198	12	40.1	47	0	
16						
21	203	15	37.8	67	0	
22	204	15	38.4	71	0	
23						
24	221	15	41.4	63	0	
25	218	15	43.4	67	0	
26	227	15	41.2	61	0	
31	205	15	39.6	63	0	
32	215	15	40.4	63	0	
33	195	10	39.8	43	0	
34	213	15	41.0	63	0	
35	217	15	41.2	67	0	
36	225	15	41.6	63	0	
41	190	20	36.6	83	0	
42	202	20	41.2	79	0	
43	216	20	42.2	79	0	
44	204	20	41.8	79	0	
45	212	20	41.5	85	0	
46	210	20	41.5	79	0	
51	203	30	37	130	0	
52	216	30	38	134	0	
53						
54	248	30	45	134	0	
55	251	30	44.4	134	0	
56	209	18	44.3	71	0	
61	206	35	35.8	162	0	
62	221	35	37.2	158	0	
63	248	35	43.7	162	0	
64	246	35	42.7	166	0	
65	248	35	44.4	158	0	
66	241	35	45.6	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	247	0	
73	238	45	43.1	203	0	
74	254	45	41.9	213	0	
75	246	45	41.9	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 18:00
Date: 12/19/00
Initials: R R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
⊘ 11						
12	196	12	38.7	51	0	
13	49	9	10.3	15	116	
14	202	12	40.3	~~51~~	0	
15	217	12	42.0	51	116	
⊘ 16						
⊘ 21						
⊘ 22						
23	189	10	38.6	39	0	
⊘ 24						
25	208	15	40.5	65	0	
26	223	15	41.6	67	0	
31	~~216~~	~~16~~	41.1	67	0	
32	213	15	39.1	67	0	
⊘ 33	~~218~~	~~15~~	~~41.6~~	~~67~~	~~0~~	
34	218	15	41.6	67	0	
35	209	15	40.2	71	0	
36	211	15	40.0	67	0	
41	208	20	41.2	83	0	
42	199	20	34.8	79	0	
43	216	20	42.5	79	0	
44	196	20	39.0	83	0	
45	202	20	39.2	83	0	
46	193	20	38.6	83	0	
51	248	30	43.7	134	0	
52	231	30	42.2	130	0	
53	239	30	42.6	134	0	
54	217	30	39.4	126	0	
55	222	30	40.7	134	0	
⊘ 56						
61	246	31	42.8	162	0	
62	244	35	42.6	158	0	
63	254	35	38.3	168	0	
64	222	35	40.9	158	0	
65	226	35	38.3	158	0	
66	231	35	42.6	154	0	
71	306	45	44.6	217	0	
72	245	45	40.8	217	0	
73	310	45	42.9	213	0	
74	165	19	33.0	75	0	
75	257	45	42.2	217	0	
76	296	45	422	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 18:00
Date: 12/19/00
Initials: R.A.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	192	12	37.5	47	0	
12	197	12	38.1	47	0	
13						
14	201	12	35	51	0	
15	200	12	40	47	0	
16						
21	204	15	38	67	0	
22	204	15	38	67	0	
23						
24	221	15	41	63	0	
25	218	15	42	71	0	
26	224	15	41	63	0	
31	204	15	39	67	0	
32	215	15	40	63	0	
33	197	10	39	43	0	
34	214	15	40	63	0	
35	221	15	41	67	0	
36	226	15	41	67	0	
41	191	20	36	83	0	
42	202	20	41	79	0	
43	214	20	42	79	0	
44	204	20	41	79	0	
45	213	20	41	79	0	
46	207	20	41	79	0	
51	202	30	37	130	0	
52	216	30	38	134	0	
53						
54	252	31	45	134	0	
55	251	30	44	134	0	
56	156	15	44	71	0	
61	206	35	35	162	0	
62	221	35	37	162	0	
63	248	35	43	158	0	
64	248	35	42	169	0	
65	248	35	44	158	0	
66	241	35	45	154	0	
71	215	45	36	213	0	
72	234	45	37	217	0	
73	238	45	43	201	0	
74	255	45	41	213	0	
75	295	45	41	217	0	
76	322	45	44	213	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # 2

Time: 19:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11						
12	200	12	39	51	0	
13	53	12	8.9	27	108	
14	208	12	41	51	0	
15	222	12	42	47	79	
16						
21						
22						
23	191	10	39	39	0	
24						
25	209	15	40	67	0	
26	229	15	42	67	0	
31	168	6	37	23	0	
32	215	15	40	67	0	
33						
34	215	15	41	67	0	
35	212	15	40	67	0	
36	214	15	40	67	0	
41	208	20	41	83	0	
42	200	20	34	83	0	
43	218	20	42	79	0	
44	197	20	39	83	0	
45	202	20	39	79	0	
46	194	20	38	83	0	
51	248	30	44	134	0	
52	231	30	42	130	0	
53	240	30	42	134	0	
54	219	30	39	130	0	
55	225	30	40	134	0	
56						
61	246	35	42	102	0	
62	241	35	42	158	0	
63	255	35	38	189	0	
64	222	35	40	158	0	
65	228	35	38	162	0	
66	231	35	42	154	0	
71	307	45	44	217	0	
72	247	45	40	221	0	
73	310	45	42	213	0	
74	163	18	33	71	0	
75	257	45	42	217	0	
76	296	45	42	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # 2

Time: 19:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37	47	0	
12	200	12	39	47	0	
13						
14	202	12	36	51	0	
15	200	12	40	47	0	
16						
21	205	15	38	67	0	
22	204	15	38	67	0	
23						
24	222	15	41	63	0	
25	217	15	42	67	0	
26	221	15	41	59	0	
31	206	15	41	63	0	
32	217	15	40	63	0	
33	195	10	39	43	0	
34	217	15	41	63	0	
35	219	15	41	67	0	
36	226	15	41	63	0	
41	190	20	36	83	0	
42	202	20	41	79	0	
43	215	20	42	79	0	
44	204	20	41	79	0	
45	213	20	41	79	0	
46	209	20	41	79	0	
51	202	30	37	130	0	
52	216	30	38	134	0	
53	2					
54	249	30	45	134	0	
55	251	30	44	134	0	
56	214	18	44	71	0	
61	205	35	35	158	0	
62	222	35	37	112	0	
63	250	35	44	162	0	
64	248	35	42	169	0	
65	248	35	44	156	0	
66	245	35	45	154	0	
71	217	45	36	213	0	
72	233	45	37	217	0	
73	239	45	43	203	0	
74	254	45	41	209	0	
75	297	45	42	217	0	
76	323	45	44	217	0	


GCI