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ENVIRONMENTAL AFFAIRS

AIR SERVICES REPORT

NITROGEN OXIDES - BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION SOURCE EMISSION TEST #6

POLK POWER STATION

AIRS # 1050233

UNIT NO.1 COMBUSTION TURBINE & HEAT RECOVERY STEAM GENERATOR FIRED ON SYNGAS

AUGUST 15, 2000

Prepared by Tampa Electric Company
Environmental Affairs
September 1, 2000

REPORT CERTIFICATION

I have reviewed the test performance, the resulting calculations, and contents of this report, and verified that all project quality objectives have been met.

Date 9/1/2000 Signature _____

Senior Environmental Technician
Air Services
Environmental Affairs
Tampa Electric Company

The sampling, analysis and calculations performed for this report were carried out under my direction, and I hereby certify that this test report is authentic and accurate to the best of my knowledge.

Date 9-1-00 Signature _____

Environmental Technician
Air Services
Environmental Affairs
Tampa Electric Company

I have reviewed the testing details and results in this report, and hereby certify that this test report is authentic and accurate to the best of my knowledge.

Date 9/5/00 Signature _____

Coordinator
Air Services
Environmental Affairs
Tampa Electric Company

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1.0 SUMMARY OF RESULTS

On August 15, 2000, the Environmental Affairs, Air Services group of Tampa Electric Company performed source emission tests on IGCC Unit No. 1 at the Polk Power Station. The combustion turbine was fired with syngas from a coal gasification system. This test was conducted to satisfy requirements in Title V permit no. 1050233-001-AV for NOx Best Available Control Technology (BACT) determinations. Testing was performed according to USEPA test methods as referenced in 40 CFR Part 60, Appendix A.

The Nitrogen Oxides (NO_x) emission rate was derived from three test runs. The calculated average was 16.6 ppm corrected to 15% oxygen on a dry basis.

During the tests on August 15, 2000, Unit No. 1 Combustion Turbine was operated at an average load of 192 megawatts. Details of turbine operation are included in Appendix C.

2.0 SOURCE DESCRIPTION/TEST PROCEDURES

Polk Power Station is located at 9995 State Route 37 South, Mulberry, Polk County, Florida. Unit No. 1 is an IGCC generating unit, 192 MW capacity when fired with Syngas fuel. The source sampling location consists of a circular stack 19 ft. in diameter with four sample ports located 90° apart on the stack circumference. A diagram of the stack sampling location is included in Figure 1 and 2 along with other pertinent information on the test site.

Nitrogen Oxides sampling was performed in accordance with USEPA Reference Method 20 (40 CFR Part 60, Appendix A) "Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines". Testing was performed using a Thermo Environmental Model 10 A/R Chemiluminescent NO-NO_x Gas Analyzer. Details of fuel bound nitrogen is found in Appendix B.

Diluent sampling was performed in accordance with USEPA Reference Method 3-A (40 CFR Part 60, Appendix A), "Determination of Oxygen and Carbon Dioxide concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)". Testing was performed using a Servomex 1400 B Oxygen Analyzer.

TCEMS Description

The following discussion briefly outlines the operation principles of Environmental Affairs Transportable Continuous Emissions Monitoring System (TCEMS). Additional information on instrument operation may be found in the individual instrument manuals provided by the manufacturers. A schematic of the TCEMS set-up is presented in Figure 3.

Servomex Model 1400 B O_2 Analyzer

The Servomex 1400B oxygen analyzer measures the paramagnetic susceptibility of the sample gas by means of a magneto-dynamic type measuring cell.

Thermo Environmental Instruments Model 10A/R NO/NOx Analyzer

The Thermo Environmental Instruments model 10A/R NO/NOx analyzer automatically and continuously determines the concentration of nitric oxide (NO) and/or oxides of nitrogen (NO_x) in a flowing gas mixture. The analytical technique is chemiluminescence.

To measure NO concentrations, the gas sample to be analyzed is blended with ozone (O_3) in a reaction chamber. The resulting chemiluminescence activity is monitored through an optical filter by a high sensitivity photomultiplier tube positioned at one end of the chamber.

This filter and photomultiplier combination responds to light of a narrow wavelength band unique to the NO/O_3 reaction, producing an interference free signal. The output from the photomultiplier is linearly proportional to the NO concentration.

To measure NO_x concentrations (i.e., NO plus NO_2), the sample gas flow is diverted through an NO_2-to-NO converter. The chemiluminescent action in the reaction chamber to the converter effluent is linearly proportional to the NO_x concentration entering the converter.

Data Acquisition System

The data acquisition system (DAS) developed by Entropy Environmentalists Inc. uses a portable personal computer with an internal 32 bit analog-to-digital converter with an external 16 channel multiplexer. In addition to providing an instantaneous display of analyzer responses, the DAS can average data, calculate emission rates, and document analyzer calibrations. The test results and calibrations are stored on the hard disk and printed on a dot matrix printer.

TCEMS Sample Handling System

The extractive monitors utilized in the TCEMS require that the effluent stream be conditioned to eliminate any possible interference (i.e., water vapor and particulate matter), before being transported and injected into each analyzer. Figure 3 depicts a schematic of the entire sample handling system. The major components of this system are listed below:

- Gas transport tubing
- Moisture removal system
- Sampling pump

Gas Transport Tubing

Two separate 1/4 inch O.D. Teflon tubes were used for the sample gas transport.

Moisture Removal System

The moisture removal system was comprised of an ice bath condenser, constructed of a 30-foot section of 3/8 inch O.D. Teflon tubing wrapped in a 12-inch coil. Effluent travels through this coil and then passes, in series, through two stainless steel moisture traps where the condensate drops out and is removed via a condensate discharge pump. With the exception of the discharge pump, the entire assembly is chilled in an ice bath.

Sampling Pump

The Thomas Model 2107CE20-TFE pump is used to transport the effluent sample through the conditioning system to the analyzers. All internal parts of the pump that come into contact with the gas sample are constructed of 316 stainless steel or Teflon.

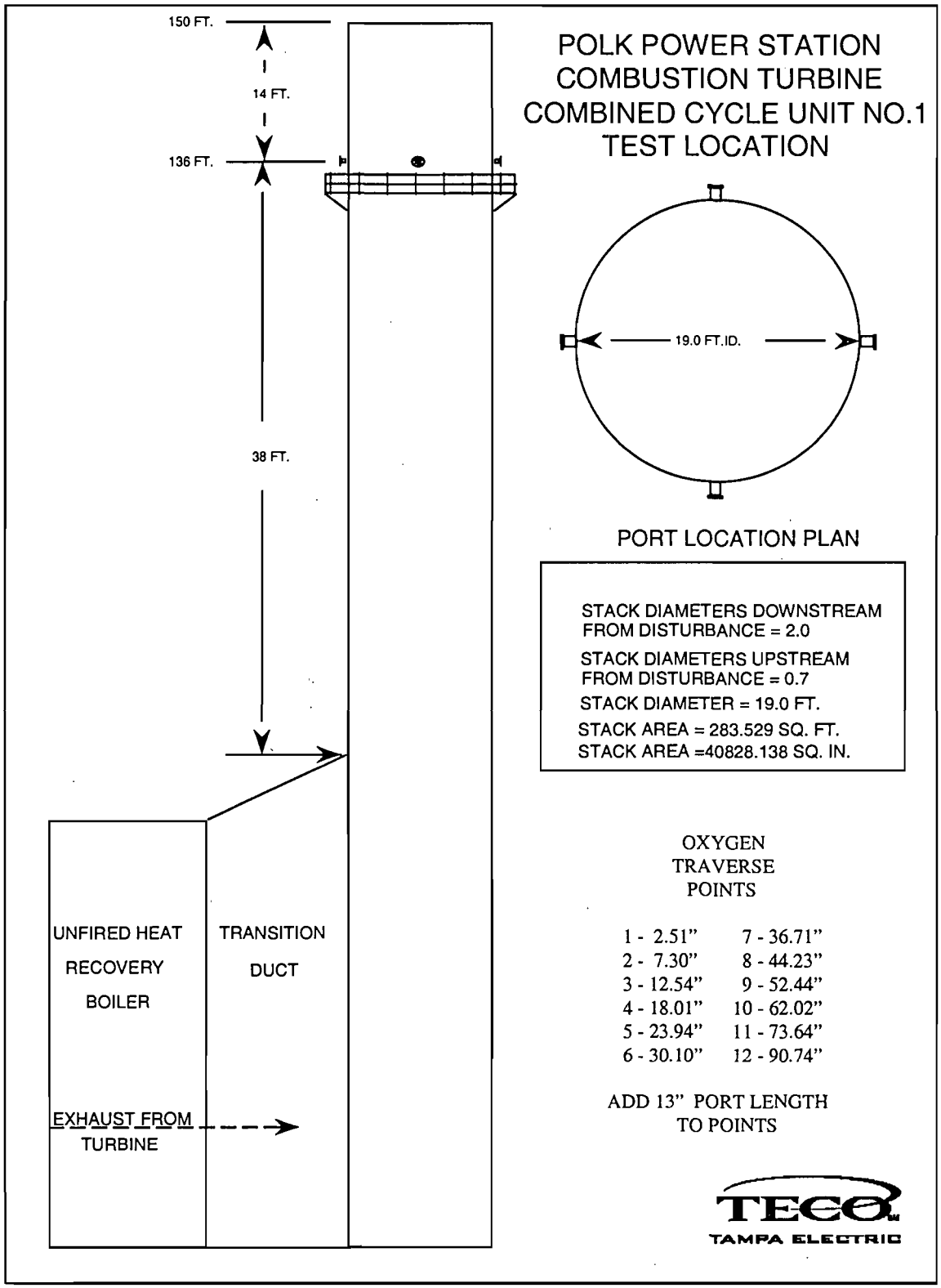
150 FT.
14 FT.
136 FT.
38 FT.
UNFIRED HEAT RECOVERY BOILER
TRANSITION DUCT
EXHAUST FROM TURBINE
POLK POWER STATION
COMBUSTION TURBINE
COMBINED CYCLE UNIT NO.1
TEST LOCATION
19.0 FT.ID.
PORT LOCATION PLAN
STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 2.0
STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 0.7
STACK DIAMETER = 19.0 FT.
STACK AREA = 283.529 SQ. FT.
STACK AREA =40828.138 SQ. IN.
OXYGEN TRAVERSE POINTS
1 - 2.51" 7 - 36.71"
2 - 7.30" 8 - 44.23"
3 - 12.54" 9 - 52.44"
4 - 18.01" 10 - 62.02"
5 - 23.94" 11 - 73.64"
6 - 30.10" 12 - 90.74"
ADD 13" PORT LENGTH TO POINTS
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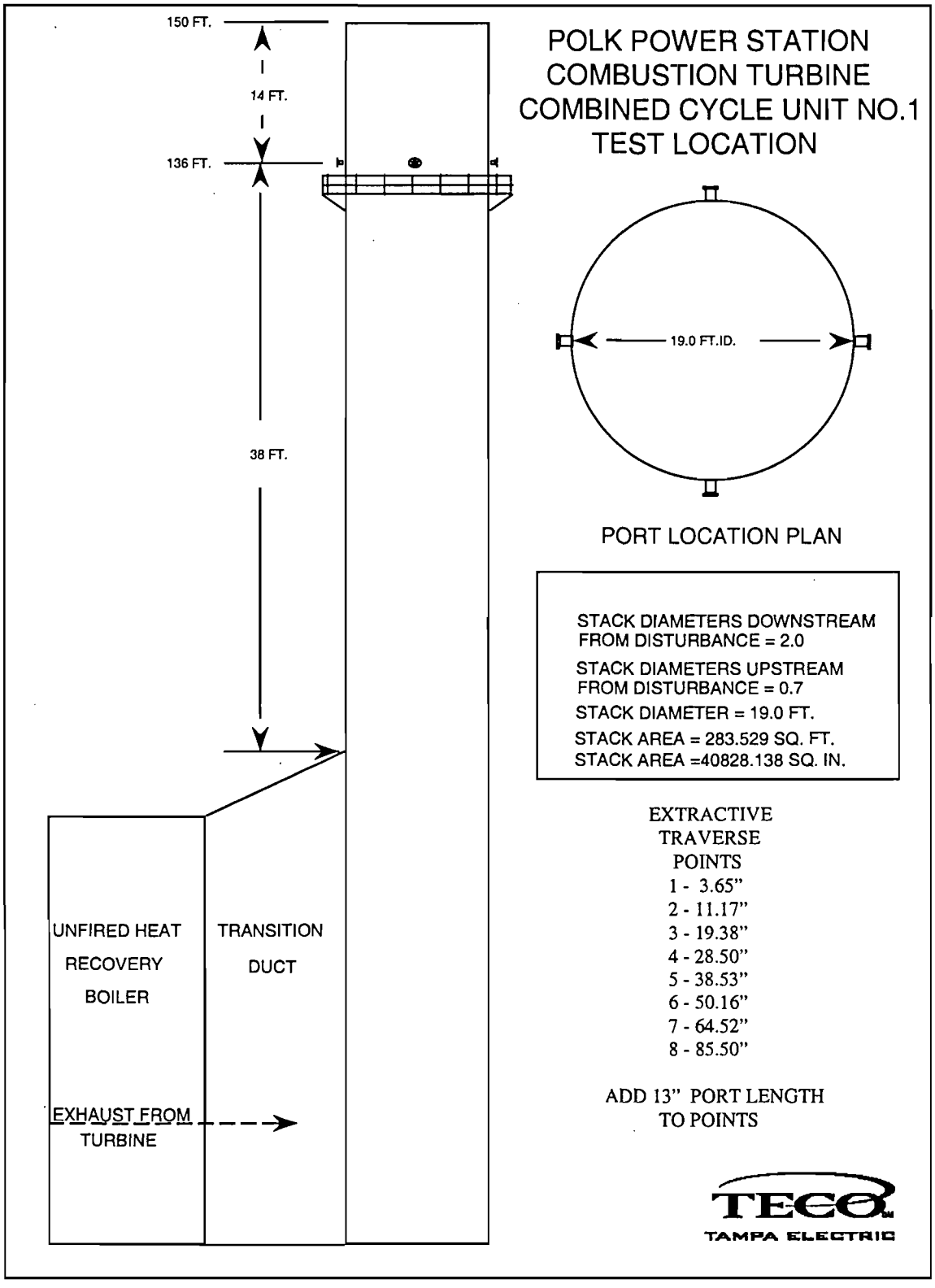
FIGURE 1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PORT LOCATION PLAN
STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 2.0
STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 0.7
STACK DIAMETER = 19.0 FT.
STACK AREA = 283.529 SQ. FT.
STACK AREA =40828.138 SQ. IN.
EXTRACTIVE TRAVERSE POINTS
1 - 3.65"
2 - 11.17"
3 - 19.38"
4 - 28.50"
5 - 38.53"
6 - 50.16"
7 - 64.52"
8 - 85.50"
ADD 13" PORT LENGTH TO POINTS
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FIGURE 2

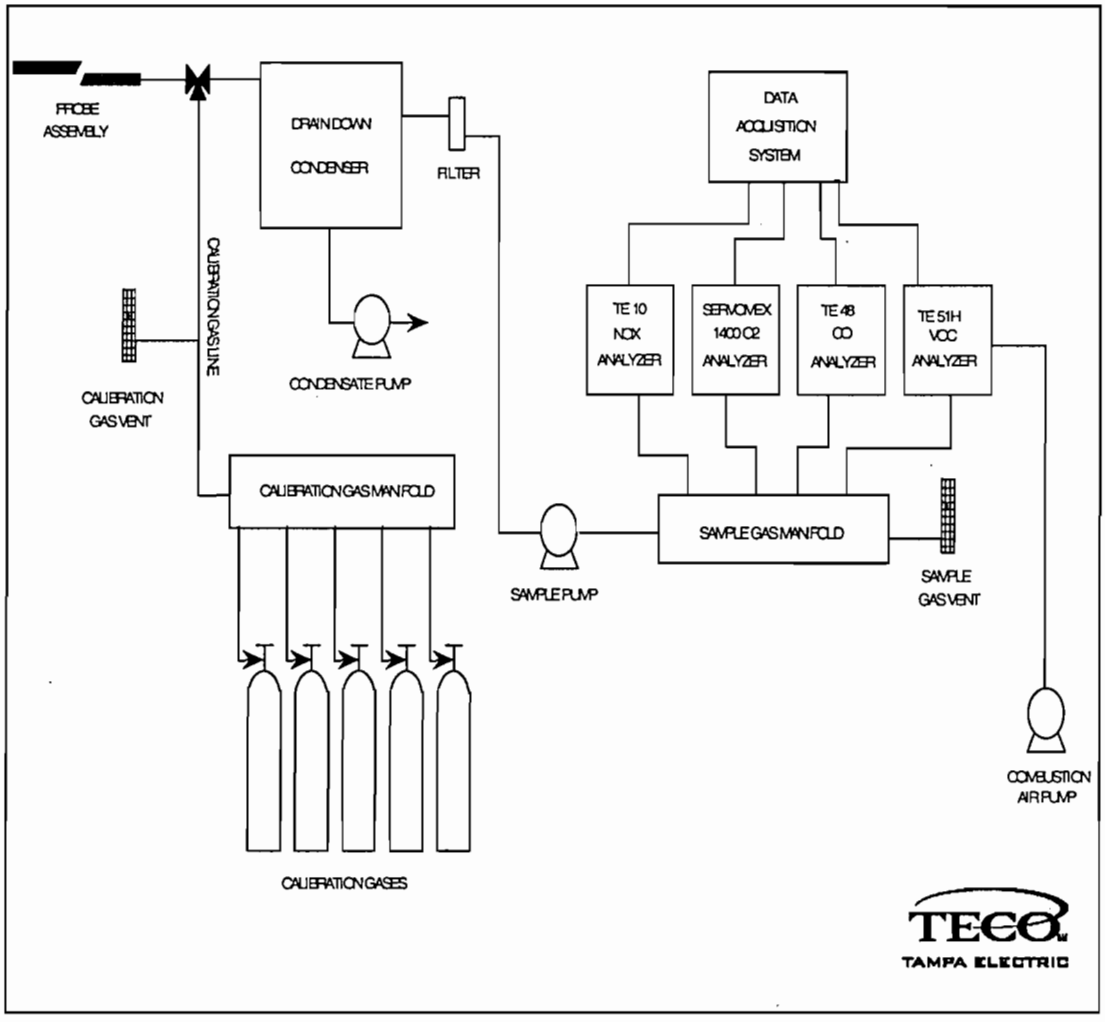


FIGURE 3
Extractive Method Sampling Trains
USEPA METHODS 3A, 10, 20, 25A

3.0 TEST RESULTS

POLK POWER STATION
NITROGEN OXIDES BACT TESTING

IGCC COMBUSTION TURBINE UNIT 1
AUGUST 15, 2000

RUN NO.	TIME	O2%	ppm NOx Dry	CORRECTED 15% O2
1	11:16 – 12:16	11.7	26.0	16.7
2	12:28 – 13:28	11.7	26.0	16.7
3	13:38 – 14:38	11.6	26.0	16.5
	Average	11.7	26.0	16.6

Corrected NOx calculated as:

Concentration (ppm NOx) x (Cd / (20.9 - $\%O_2$))

Where:

Cd = NOx coefficient of 5.9

APPENDIX A

SOURCE TEST CALCULATIONS

APPENDIX A - 1 NITROGEN OXIDE CALCULATIONS

APPENDIX A - 2 OXYGEN CALCULATIONS

APPENDIX A - 1

NITROGEN OXIDE CALCULATIONS

CALCULATION OF AVERAGE NITROGEN OXIDES EMISSIONS

RUN: 1

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm NOx	0.4	2.4	1.4
24.9 ppm NOx	24.7	25.5	25.1
0.00 % Oxygen	0.02	-0.02	0.00
11.96 % Oxygen	11.94	11.94	11.94

$\bar{C}$(NOx) = 26.4 $\bar{C}$(O2) = 11.65

CORRECTED RESULTS

26 ppm NOx
11.7 % Oxygen
16.7 ppm NOx @15% O2

Corr. Conc. = $\bar{C}ma(C - Co)/(Cm - Co)$ (for NOx)

Corr. Conc. = $[(Cma - Coa)/(Cm - Co)](C - Cm) + \bar{C}ma$ (for O2)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Coa = actual low-level calibration gas concentration
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm NOx)(5.9)/(20.9 - % Oxygen)

8200
1.194E-07

CALCULATION OF AVERAGE NITROGEN OXIDES EMISSIONS

RUN: 2

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm NOx	2.4	3.9	3.2
24.9 ppm NOx	25.5	26.9	26.2
0.00 % Oxygen	-0.02	-0.03	-0.03
11.96 % Oxygen	11.94	11.93	11.94
$\bar{C}$(NOx) =	27.4	$\bar{C}$(O2) =	11.64

CORRECTED RESULTS

26 ppm NOx
11.7 % Oxygen
16.7 ppm NOx @15% O2

Corr. Conc. = $\bar{C}ma(C - Co)/(Cm - Co)$ (for NOx)

Corr. Conc. = $[(Cma - Coa)/(Cm - Co)](C - Cm) + \bar{C}ma$ (for O2)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Coa = actual low-level calibration gas concentration
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm NOx)(5.9)/(20.9 - % Oxygen)

8200
1.194E-07

CALCULATION OF AVERAGE NITROGEN OXIDES EMISSIONS

RUN: 3

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.0 ppm NOx	3.9	4.4	4.2
24.9 ppm NOx	26.9	27.1	27.0
0.00 % Oxygen	-0.03	-0.03	-0.03
11.96 % Oxygen	11.93	11.92	11.93

$\bar{C}$(NOx) = 28.0 $\bar{C}$(O2) = 11.61

CORRECTED RESULTS

26 ppm NOx
11.6 % Oxygen
16.5 ppm NOx @15% O2

Corr. Conc. = $\bar{C}$ma(C - Co)/(Cm - Co) (for NOx)

Corr. Conc. = [(Cma - Coa)/(Cm - Co)](C - Cm) + $\bar{C}$ma (for O2)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Coa = actual low-level calibration gas concentration
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

E = (ppm NOx)(5.9)/(20.9 - % Oxygen)

8200
1.194E-07

APPENDIX A - 2

OXYGEN CALCULATIONS

CALCULATION OF AVERAGE OXYGEN CONCENTRATION

RUN: 1

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 % Oxygen	0.02	-0.02	0.00
11.96 % Oxygen	11.94	11.94	11.94

$\bar{C}$ = 11.65

CORRECTED RESULTS

11.7 % Oxygen

Corrected Conc. = $Cma(C - \bar{Co})/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE OXYGEN CONCENTRATION

RUN: 2

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 % Oxygen	-0.02	-0.03	-0.03
11.96 % Oxygen	11.94	11.93	11.94

$\bar{C}$ = 11.64

CORRECTED RESULTS

11.7 % Oxygen

Corrected Conc. = Cma(C - $\bar{C}$o)/(Cm - Co)

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

CALCULATION OF AVERAGE OXYGEN CONCENTRATION

RUN: 3

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

GAS VALUE	INITIAL CAL	FINAL CAL	MEAN CAL
0.00 % Oxygen	-0.03	-0.03	-0.03
11.96 % Oxygen	11.93	11.92	11.93

$\bar{C}$ = 11.61

CORRECTED RESULTS

11.6 % Oxygen

Corrected Conc. = $Cma(C - \bar{Co})/(Cm - Co)$

Where: $\bar{C}$ = mean reference measurement
Co = mean zero calibration response
Cm = mean mid or upscale calibration gas response
Cma = actual mid or upscale calibration gas concentration

APPENDIX B

TURBINE DATA

POLK POWER STATION UNIT NO.1 BACT TEST NO.6

	1TSYFI910 GT SYNGAS MASS FLOW LB/SEC	1PWRJI900 GT GEN LOAD WATTS MW	1GMLJI962 GT GENERATOR WATTS MW	1TSYJYI910 GT SYNGAS LOWER HEAT VA BTU/LB	1NITFI920A GT N2 FLOW LBS/SEC	1TMST1922M GT CPRSR MAX INL FLANGE TE F	1TMSPI909 AMBIENT BAR PRESS IN HGA
AVERAGE DURING TEST PERIOD	**100.103911**	**191.789905**	**192.215860**	**174.954071**	**124.978627**	**87.086089**	**29.932715**
15-Aug-00 11:16:00	100.082787	191.953186	192.132690	174.954071	124.438728	88.436882	29.947798
15-Aug-00 11:17:00	100.109642	191.915298	192.140320	174.954071	124.444077	88.669716	29.947649
15-Aug-00 11:18:00	100.215736	191.877396	192.147949	174.954071	124.449417	89.049164	29.947502
15-Aug-00 11:19:00	100.076096	191.812195	192.155563	174.954071	124.454758	88.572853	29.947353
15-Aug-00 11:20:00	100.470512	191.557114	192.163177	174.954071	124.460121	88.135185	29.947203
15-Aug-00 11:21:00	100.306694	191.807892	192.170792	174.954071	124.465446	88.238411	29.947052
15-Aug-00 11:22:00	100.605095	192.058685	192.178406	174.954071	124.470802	88.341637	29.946903
15-Aug-00 11:23:00	100.279549	191.641891	192.186020	174.954071	124.476151	88.107765	29.946753
15-Aug-00 11:24:00	100.346184	191.998962	192.193634	174.954071	124.481491	87.808006	29.946604
15-Aug-00 11:25:00	100.223984	191.606934	192.201248	174.954071	124.486839	87.377769	29.946453
15-Aug-00 11:26:00	100.341713	192.069702	192.208862	174.954071	124.492180	86.947517	29.946304
15-Aug-00 11:27:00	100.598167	191.733444	192.216492	174.954071	124.497520	86.875816	29.946157
15-Aug-00 11:28:00	100.497017	191.667526	192.224106	174.954071	124.502884	86.875816	29.946007
15-Aug-00 11:29:00	100.353447	191.722458	192.231735	174.954071	124.508224	86.875816	29.945858
15-Aug-00 11:30:00	100.380241	191.777390	192.239349	174.954071	124.513565	86.875816	29.945707
15-Aug-00 11:31:00	100.418846	191.832321	192.244797	174.954071	124.518913	86.875816	29.945559
15-Aug-00 11:32:00	100.287224	191.616928	192.122925	174.954071	124.524254	87.188950	29.945408
15-Aug-00 11:33:00	100.450066	191.653458	192.005798	174.954071	124.529594	87.188942	29.945261
15-Aug-00 11:34:00	100.786156	191.826950	192.025940	174.954071	124.534943	87.677193	29.945110
15-Aug-00 11:35:00	100.489769	191.686493	192.046082	174.954071	124.540298	87.815178	29.944963
15-Aug-00 11:36:00	100.434837	191.822357	192.066238	174.954071	124.545639	87.929039	29.944813
15-Aug-00 11:37:00	100.400841	191.958206	192.086365	174.954071	124.550987	87.587456	29.944664
15-Aug-00 11:38:00	100.438126	191.830002	192.106506	174.954071	124.556328	87.558304	29.944513
15-Aug-00 11:39:00	100.306107	191.588623	192.126663	174.954071	124.561684	87.633308	29.944365
15-Aug-00 11:40:00	100.324715	191.820419	192.146805	174.954071	124.567017	87.708313	29.944214
15-Aug-00 11:41:00	100.554604	192.063049	192.166946	174.954071	124.572372	87.783310	29.944065
15-Aug-00 11:42:00	100.586922	191.581970	192.187088	174.954071	124.577713	87.858307	29.943914
15-Aug-00 11:43:00	100.681480	191.719223	192.207230	174.954071	124.583061	87.933304	29.943766

15-Aug-00 11:44:00	99.944450	191.820419	192.227371	174.954071	124.588402	88.008308	29.943617
15-Aug-00 11:45:00	100.465179	191.779221	192.247528	174.954071	124.593750	88.083305	29.943468
15-Aug-00 11:46:00	100.410652	192.031525	192.267670	174.954071	124.599091	87.815178	29.943317
15-Aug-00 11:47:00	100.251167	191.668594	192.287811	174.954071	124.604431	87.825279	29.943169
15-Aug-00 11:48:00	100.199593	191.702316	192.307953	174.954071	124.609795	87.747215	29.943018
15-Aug-00 11:49:00	100.595551	191.749924	192.328094	174.954071	124.615135	87.601578	29.942871
15-Aug-00 11:50:00	100.268333	192.092346	192.348236	174.954071	124.620476	87.310143	29.942720
15-Aug-00 11:51:00	100.387459	192.241577	192.366913	174.954071	124.625824	86.875816	29.942572
15-Aug-00 11:52:00	100.640984	192.012695	192.343140	174.954071	124.631165	86.707420	29.942425
15-Aug-00 11:53:00	100.140053	191.783813	192.319351	174.954071	124.636505	86.075920	29.942274
15-Aug-00 11:54:00	100.282860	191.597488	192.295578	174.954071	124.641869	85.652916	29.942125
15-Aug-00 11:55:00	100.771774	191.510513	192.271805	174.954071	124.647194	85.757286	29.941975
15-Aug-00 11:56:00	100.288239	191.521042	192.248047	174.954071	124.652550	85.861656	29.941826
15-Aug-00 11:57:00	100.040604	191.664322	192.224258	174.954071	124.657898	86.086403	29.941675
15-Aug-00 11:58:00	100.073792	191.586502	192.200485	174.954071	124.663239	86.546219	29.941526
15-Aug-00 11:59:00	100.131317	191.641891	192.176697	174.954071	124.668579	86.381424	29.941376
15-Aug-00 12:00:00	100.100105	191.904968	192.152939	174.954071	124.673927	86.308289	29.941227
15-Aug-00 12:01:00	100.287231	191.755432	192.129150	174.954071	124.679283	86.322945	29.941078
15-Aug-00 12:02:00	100.081154	191.605881	192.137772	174.954071	124.684624	86.873199	29.940929
15-Aug-00 12:03:00	100.095665	191.509308	192.151382	174.954071	124.689972	87.423454	29.940779
15-Aug-00 12:04:00	100.245857	191.624481	192.164978	174.954071	124.695313	87.973701	29.940630
15-Aug-00 12:05:00	100.137177	191.739639	192.178589	174.954071	124.700653	88.425934	29.940481
15-Aug-00 12:06:00	100.034187	191.818130	192.192184	174.954086	124.706001	88.322716	29.940332
15-Aug-00 12:07:00	100.292152	191.566376	192.205795	174.954071	124.711357	88.219482	29.940182
15-Aug-00 12:08:00	100.106773	191.379135	192.219391	174.954071	124.716690	87.869881	29.940033
15-Aug-00 12:09:00	100.395737	191.710983	192.233002	174.954071	124.722046	88.338745	29.939884
15-Aug-00 12:10:00	100.342728	191.486252	192.246597	174.954071	124.727386	88.807610	29.939735
15-Aug-00 12:11:00	99.987862	192.108826	192.246841	174.954071	124.732735	88.625198	29.939585
15-Aug-00 12:12:00	100.328613	192.140869	192.247574	174.954071	124.738075	88.815422	29.939436
15-Aug-00 12:13:00	100.159081	191.889099	192.262589	174.954071	124.743431	88.795509	29.939285
15-Aug-00 12:14:00	100.203384	192.063889	192.277603	174.954071	124.748764	88.198006	29.939137
15-Aug-00 12:15:00	99.975357	191.790222	192.292618	174.954071	124.754120	88.697319	29.938986
15-Aug-00 12:16:00	100.607048	191.955017	192.307648	174.954071	124.759460	89.658508	29.938837
15-Aug-00 12:17:00	100.241257	191.773819	192.322662	174.954071	124.764809	90.307442	29.938686
15-Aug-00 12:18:00	100.158821	191.961090	192.337662	174.954071	124.770149	90.372330	29.938540
15-Aug-00 12:19:00	100.445724	191.972412	192.352692	174.954071	124.775490	89.674324	29.938389
15-Aug-00 12:20:00	100.414444	191.908310	192.367706	174.954071	124.780853	89.059532	29.938240

15-Aug-00 12:21:00	100.165932	191.802567	192.311920	174.954071	124.786179	88.747704	29.938093
15-Aug-00 12:22:00	99.994972	191.678970	192.256134	174.954071	124.791534	88.655357	29.937943
15-Aug-00 12:23:00	100.345680	191.923874	192.200333	174.954071	124.796883	88.563011	29.937794
15-Aug-00 12:24:00	99.989052	191.951813	192.244720	174.954071	124.802223	88.470665	29.937643
15-Aug-00 12:25:00	100.369698	191.819046	192.292511	174.954071	124.807564	88.705803	29.937494
15-Aug-00 12:26:00	99.942619	191.837830	192.340332	174.954071	124.812927	88.579056	29.937344
15-Aug-00 12:27:00	100.358032	191.699051	192.388153	174.954071	124.818253	88.249237	29.937197
15-Aug-00 12:28:00	100.486267	191.649933	192.435959	174.954071	124.823608	88.345894	29.937046
15-Aug-00 12:29:00	100.571617	191.600815	192.483780	174.954071	124.828957	88.689445	29.936897
15-Aug-00 12:30:00	100.186935	191.551666	192.423950	174.954071	124.834297	88.699875	29.936747
15-Aug-00 12:31:00	100.266708	191.860474	192.352142	174.954071	124.839645	88.517441	29.936598
15-Aug-00 12:32:00	100.153572	191.889099	192.280350	174.954071	124.844986	88.663292	29.936447
15-Aug-00 12:33:00	100.168526	191.917709	192.208557	174.954071	124.850327	88.741035	29.936298
15-Aug-00 12:34:00	100.158592	191.872269	192.136765	174.954071	124.855675	88.617065	29.936148
15-Aug-00 12:35:00	100.093147	191.715729	192.140640	174.954071	124.861031	88.493080	29.936001
15-Aug-00 12:36:00	100.022514	191.559204	192.157928	174.954071	124.866371	88.441422	29.935850
15-Aug-00 12:37:00	100.263031	191.462463	192.175186	174.954071	124.871719	88.441422	29.935703
15-Aug-00 12:38:00	100.133881	191.505188	192.192444	174.954071	124.877060	88.867882	29.935553
15-Aug-00 12:39:00	100.319382	191.547897	192.209717	174.954071	124.882416	88.966248	29.935404
15-Aug-00 12:40:00	100.346367	191.705154	192.226974	174.954071	124.887749	89.064606	29.935253
15-Aug-00 12:41:00	100.207108	191.647568	192.244232	174.954071	124.893105	89.334389	29.935104
15-Aug-00 12:42:00	100.415207	191.767563	192.596115	174.954071	124.898445	89.746086	29.934954
15-Aug-00 12:43:00	100.221130	191.887527	192.427917	174.954071	124.903793	89.746086	29.934805
15-Aug-00 12:44:00	99.865280	191.792969	192.157532	174.954071	124.909134	89.528633	29.934658
15-Aug-00 12:45:00	100.602608	191.934875	192.441010	174.954071	124.914490	89.695763	29.934507
15-Aug-00 12:46:00	100.354935	191.734360	192.375320	174.954071	124.919823	89.544807	29.934357
15-Aug-00 12:47:00	100.414177	191.805328	192.246750	174.954071	124.925179	89.252792	29.934208
15-Aug-00 12:48:00	100.389420	191.892303	192.241928	174.954071	124.930519	88.782539	29.934057
15-Aug-00 12:49:00	100.209969	191.915253	192.237106	174.954086	124.935867	88.659241	29.933908
15-Aug-00 12:50:00	99.919586	191.788818	192.232300	174.954071	124.941208	88.535950	29.933758
15-Aug-00 12:51:00	100.352203	191.747177	192.227478	174.954071	124.946548	88.367119	29.933609
15-Aug-00 12:52:00	99.720146	192.044739	192.222656	174.954071	124.951897	88.048698	29.933458
15-Aug-00 12:53:00	100.188972	191.733444	192.217834	174.954071	124.957237	87.866570	29.933313
15-Aug-00 12:54:00	100.027664	192.081360	192.213028	174.954071	124.962593	88.059258	29.933165
15-Aug-00 12:55:00	100.200737	191.681854	192.208206	174.954071	124.967941	88.251945	29.933014
15-Aug-00 12:56:00	99.794380	191.685745	192.203384	174.954071	124.973282	88.438599	29.932865
15-Aug-00 12:57:00	100.211380	191.998962	192.198563	174.954071	124.978630	88.269356	29.932714

15-Aug-00 12:58:00	99.837402	191.986496	192.171066	174.954071	124.983971	87.863358	29.932566
15-Aug-00 12:59:00	99.877441	191.973999	192.143173	174.954071	124.989311	88.104927	29.932415
15-Aug-00 13:00:00	99.986725	191.808731	192.115295	174.954071	124.994675	87.824524	29.932266
15-Aug-00 13:01:00	99.838669	191.605270	192.087402	174.954071	125.000000	87.914696	29.932117
15-Aug-00 13:02:00	99.995758	191.784225	192.059509	174.954071	125.005356	88.017639	29.931969
15-Aug-00 13:03:00	100.071190	191.963165	192.031631	174.954071	125.010704	88.120583	29.931818
15-Aug-00 13:04:00	100.065361	191.771896	192.008011	174.954071	125.016045	88.223526	29.931669
15-Aug-00 13:05:00	100.245071	191.865112	192.065552	174.954071	125.021385	88.326469	29.931519
15-Aug-00 13:06:00	99.793243	192.052597	192.123108	174.954071	125.026733	88.429413	29.931370
15-Aug-00 13:07:00	99.837395	191.984924	192.180649	174.954071	125.032089	89.058662	29.931219
15-Aug-00 13:08:00	100.278015	191.807922	192.238205	174.954071	125.037430	88.826881	29.931070
15-Aug-00 13:09:00	100.448006	191.630905	192.236572	174.954071	125.042778	88.491707	29.930925
15-Aug-00 13:10:00	100.342064	191.776474	192.224503	174.954071	125.048119	86.965286	29.930775
15-Aug-00 13:11:00	99.916985	191.622757	192.212448	174.954071	125.053459	85.228645	29.930626
15-Aug-00 13:12:00	100.049744	191.712082	192.200378	174.954071	125.058807	84.612122	29.930475
15-Aug-00 13:13:00	99.652962	191.794968	192.188324	174.954071	125.064163	84.167915	29.930326
15-Aug-00 13:14:00	100.050186	191.752060	192.176254	174.954071	125.069496	83.836815	29.930176
15-Aug-00 13:15:00	100.070015	191.709122	192.164185	174.954071	125.074852	83.895012	29.930025
15-Aug-00 13:16:00	100.164413	191.936325	192.152115	174.954071	125.080193	83.685097	29.929876
15-Aug-00 13:17:00	99.768883	191.902603	192.140060	174.954071	125.085533	83.475182	29.929726
15-Aug-00 13:18:00	99.904930	191.927551	192.127991	174.954071	125.090881	83.617104	29.929579
15-Aug-00 13:19:00	99.920128	191.641891	192.120651	174.954071	125.096237	83.829391	29.929430
15-Aug-00 13:20:00	100.040596	191.863968	192.114258	174.954071	125.101570	84.041664	29.929279
15-Aug-00 13:21:00	100.157364	191.893524	192.107864	174.954071	125.106926	83.931511	29.929131
15-Aug-00 13:22:00	100.128311	191.923050	192.101486	174.954071	125.112267	83.778770	29.928980
15-Aug-00 13:23:00	99.947128	191.681122	192.095078	174.954071	125.117615	83.879578	29.928831
15-Aug-00 13:24:00	100.082809	192.112747	192.088684	174.954071	125.122955	84.031082	29.928680
15-Aug-00 13:25:00	99.892845	192.027191	192.082291	174.954071	125.128296	83.707008	29.928534
15-Aug-00 13:26:00	99.741928	192.304749	192.075897	174.954086	125.133659	83.646599	29.928385
15-Aug-00 13:27:00	99.762566	191.965088	192.069504	174.954056	125.138985	83.586189	29.928236
15-Aug-00 13:28:00	99.802757	191.810120	192.063110	174.954086	125.144341	83.525787	29.928085
15-Aug-00 13:29:00	99.853592	191.651810	192.056717	174.954056	125.149689	83.465370	29.927937
15-Aug-00 13:30:00	99.997360	191.453293	192.050323	174.954086	125.155029	83.486015	29.927786
15-Aug-00 13:31:00	99.517464	191.770676	192.043930	174.954056	125.160370	83.027794	29.927637
15-Aug-00 13:32:00	100.039070	192.088058	192.037521	174.954086	125.165733	82.983788	29.927486
15-Aug-00 13:33:00	99.893059	192.156433	192.031128	174.954056	125.171059	82.776817	29.927338
15-Aug-00 13:34:00	99.858002	191.759079	192.024750	174.954086	125.176414	83.024422	29.927187

15-Aug-00 13:35:00	99.924736	191.771729	192.018341	174.954056	125.181763	83.184013	29.927040
15-Aug-00 13:36:00	99.880371	192.002335	192.011948	174.954056	125.187103	83.287521	29.926889
15-Aug-00 13:37:00	99.986717	191.790314	192.005554	174.954056	125.192444	83.391037	29.926741
15-Aug-00 13:38:00	100.128250	191.688370	192.480621	174.954056	125.197792	83.494545	29.926590
15-Aug-00 13:39:00	100.064819	191.843307	192.242889	174.954086	125.203133	83.598053	29.926441
15-Aug-00 13:40:00	99.749641	191.715149	192.005127	174.954056	125.208481	83.701561	29.926291
15-Aug-00 13:41:00	99.960777	191.806702	192.164490	174.954086	125.213837	83.616188	29.926144
15-Aug-00 13:42:00	100.023605	191.601105	192.323868	174.954056	125.219177	83.341927	29.925995
15-Aug-00 13:43:00	99.911903	192.017273	192.483261	174.954086	125.224525	83.196663	29.925844
15-Aug-00 13:44:00	99.952637	191.886047	192.227188	174.954056	125.229866	83.517815	29.925694
15-Aug-00 13:45:00	99.707687	191.754822	191.956787	174.954086	125.235222	83.494957	29.925547
15-Aug-00 13:46:00	99.539612	191.623581	192.100616	174.954056	125.240555	83.700279	29.925398
15-Aug-00 13:47:00	99.930870	191.907410	192.244431	174.954086	125.245911	83.905602	29.925247
15-Aug-00 13:48:00	99.828278	191.719727	192.213364	174.954056	125.251251	84.168098	29.925098
15-Aug-00 13:49:00	99.855949	191.834167	192.179321	174.954086	125.256599	84.637352	29.924948
15-Aug-00 13:50:00	100.274200	191.948608	192.145264	174.954056	125.261940	84.962029	29.924799
15-Aug-00 13:51:00	99.566681	191.678513	192.111221	174.954086	125.267281	84.811737	29.924648
15-Aug-00 13:52:00	99.508362	191.634750	192.077194	174.954056	125.272629	84.754433	29.924501
15-Aug-00 13:53:00	99.877632	191.671585	192.043152	174.954086	125.277985	85.224121	29.924351
15-Aug-00 13:54:00	100.146828	191.708450	192.009094	174.954056	125.283325	85.600433	29.924202
15-Aug-00 13:55:00	100.040520	191.745300	192.462662	174.954086	125.288673	85.447693	29.924051
15-Aug-00 13:56:00	99.941780	191.782135	192.404541	174.954056	125.294014	85.342613	29.923903
15-Aug-00 13:57:00	99.899284	191.818985	192.316116	174.954086	125.299355	85.392349	29.923754
15-Aug-00 13:58:00	99.922287	191.855835	192.227676	174.954056	125.304703	85.953590	29.923605
15-Aug-00 13:59:00	99.889519	191.892654	192.139236	174.954086	125.310043	86.100357	29.923454
15-Aug-00 14:00:00	99.950897	191.748093	192.228714	174.954056	125.315399	86.247139	29.923306
15-Aug-00 14:01:00	99.676811	192.143173	192.349564	174.954086	125.320732	86.393906	29.923157
15-Aug-00 14:02:00	99.560570	191.791443	192.470428	174.954056	125.326088	86.540680	29.923008
15-Aug-00 14:03:00	100.144798	191.751770	192.077652	174.954086	125.331429	86.305138	29.922857
15-Aug-00 14:04:00	100.010925	191.770081	192.487473	174.954056	125.336777	86.813194	29.922709
15-Aug-00 14:05:00	99.960258	191.648010	192.465759	174.954086	125.342117	87.090065	29.922558
15-Aug-00 14:06:00	100.087006	191.733459	192.444046	174.954056	125.347473	87.280197	29.922409
15-Aug-00 14:07:00	99.960075	191.818909	192.422348	174.954086	125.352806	87.387550	29.922258
15-Aug-00 14:08:00	99.877556	191.710114	192.400620	174.954056	125.358162	87.494904	29.922110
15-Aug-00 14:09:00	100.040596	191.407013	192.378906	174.954086	125.363510	87.294960	29.921963
15-Aug-00 14:10:00	100.023628	191.103912	192.357193	174.954056	125.368851	87.073067	29.921812
15-Aug-00 14:11:00	99.928581	192.040176	192.335480	174.954086	125.374191	86.851166	29.921661

15-Aug-00 14:12:00	99.915108	191.744431	192.313782	174.954056	125.379539	86.629265	29.921513
15-Aug-00 14:13:00	100.033073	191.887268	192.292053	174.954086	125.384895	86.720009	29.921362
15-Aug-00 14:14:00	99.871208	191.776733	192.270355	174.954056	125.390221	86.944733	29.921215
15-Aug-00 14:15:00	99.932739	192.016739	192.248642	174.954086	125.395584	87.169464	29.921066
15-Aug-00 14:16:00	100.054779	191.923340	192.236740	174.954056	125.400925	87.394196	29.920916
15-Aug-00 14:17:00	99.666733	191.829941	192.225739	174.954086	125.406265	87.618927	29.920767
15-Aug-00 14:18:00	99.697250	191.736557	192.214737	174.954056	125.411613	87.843651	29.920618
15-Aug-00 14:19:00	99.840691	191.643173	192.203735	174.954086	125.416969	88.068375	29.920469
15-Aug-00 14:20:00	99.814758	191.631363	192.192734	174.954056	125.422295	88.128311	29.920319
15-Aug-00 14:21:00	99.867714	191.809891	192.181732	174.954086	125.427658	88.128311	29.920170
15-Aug-00 14:22:00	100.182289	191.820023	192.170731	174.954086	125.432999	87.831665	29.920019
15-Aug-00 14:23:00	99.996422	191.558487	192.159729	174.954056	125.438339	87.682701	29.919870
15-Aug-00 14:24:00	99.985649	191.780136	192.148727	174.954086	125.443687	87.978683	29.919720
15-Aug-00 14:25:00	100.025276	191.440475	192.137711	174.954056	125.449028	88.236855	29.919573
15-Aug-00 14:26:00	99.950317	191.654099	192.126709	174.954086	125.454376	88.495026	29.919422
15-Aug-00 14:27:00	99.901016	191.788376	192.202896	174.954056	125.459732	88.753204	29.919273
15-Aug-00 14:28:00	100.015297	191.715149	192.285309	174.954086	125.465073	89.011375	29.919123
15-Aug-00 14:29:00	100.025696	192.081360	192.367706	174.954056	125.470421	89.269539	29.918974
15-Aug-00 14:30:00	100.002655	191.802521	192.352753	174.954086	125.475761	89.323502	29.918823
15-Aug-00 14:31:00	99.912979	191.611679	192.337784	174.954056	125.481102	89.172348	29.918676
15-Aug-00 14:32:00	100.120110	192.029755	192.322861	174.954086	125.486458	89.269684	29.918526
15-Aug-00 14:33:00	99.624649	191.513718	192.307892	174.954056	125.491791	89.367035	29.918377
15-Aug-00 14:34:00	99.663277	191.691605	192.292938	174.954086	125.497147	89.352203	29.918226
15-Aug-00 14:35:00	99.917358	191.430008	192.277985	174.954056	125.502495	89.458916	29.918079
15-Aug-00 14:36:00	99.672073	191.629074	192.263016	174.954086	125.507835	89.500336	29.917931
15-Aug-00 14:37:00	99.997803	191.879333	192.248062	174.954056	125.513176	89.541756	29.917780
15-Aug-00 14:38:00	99.832542	192.129578	192.246826	174.954086	125.518524	89.583176	29.917631

Polk Unit 1 Bact #6 Run 1

Record#	DATE	TIME	PC1GEN11	PC1CO212	PC1NOX13	PC1NOX14	PC1PRS15	PC1TMP16
1	08/15/2000	100600	190.913	7.792	25.492	0.090	29.966	301.413
2	08/15/2000	100700	191.146	7.788	25.577	0.091	29.970	301.343
3	08/15/2000	100800	191.165	7.791	25.618	0.091	29.968	300.150
4	08/15/2000	100900	191.198	7.794	25.652	0.091	29.968	300.172
5	08/15/2000	101000	191.187	7.798	25.575	0.090	29.967	299.922
6	08/15/2000	101100	191.011	7.805	25.428	0.090	29.966	299.680
7	08/15/2000	101200	191.089	7.809	25.391	0.090	29.965	299.724
8	08/15/2000	101300	191.208	7.806	25.365	0.090	29.965	299.834
9	08/15/2000	101400	191.093	7.808	25.260	0.089	29.965	299.757
10	08/15/2000	101500	191.191	7.791	25.131	0.089	29.965	299.706
11	08/15/2000	101600	191.289	7.787	25.130	0.089	29.965	299.703
12	08/15/2000	101700	191.211	7.785	25.366	0.090	29.965	299.898
13	08/15/2000	101800	191.160	7.783	25.289	0.090	29.966	299.932
14	08/15/2000	101900	191.162	7.780	25.289	0.090	29.965	299.975
15	08/15/2000	102000	190.963	7.780	25.278	0.090	29.964	300.060
16	08/15/2000	102100	191.075	7.773	25.130	0.089	29.962	301.271
17	08/15/2000	102200	191.011	7.771	25.265	0.090	29.965	302.130
18	08/15/2000	102300	191.109	7.775	25.316	0.090	29.963	300.840
19	08/15/2000	102400	191.549	7.783	25.281	0.090	29.963	299.448
20	08/15/2000	102500	190.992	7.784	25.350	0.090	29.962	299.463
21	08/15/2000	102600	191.256	7.782	25.296	0.090	29.960	300.173
22	08/15/2000	102700	191.135	7.778	25.353	0.090	29.962	300.112
23	08/15/2000	102800	191.302	7.780	25.314	0.090	29.962	300.306
24	08/15/2000	102900	191.337	7.784	25.307	0.090	29.964	300.416
25	08/15/2000	103000	191.478	7.786	25.564	0.091	29.963	299.540
26	08/15/2000	103100	191.079	7.777	25.785	0.091	29.964	298.882
27	08/15/2000	103200	191.089	7.777	25.718	0.091	29.962	299.047
28	08/15/2000	103300	191.290	7.769	25.572	0.091	29.960	300.064
29	08/15/2000	103400	191.117	7.763	25.430	0.090	29.959	300.064
30	08/15/2000	103500	191.300	7.763	25.238	0.090	29.958	300.296
31	08/15/2000	103600	191.508	7.766	25.147	0.089	29.959	300.332
32	08/15/2000	103700	191.086	7.770	25.270	0.090	29.959	300.248
33	08/15/2000	103800	191.097	7.766	25.199	0.089	29.959	300.174
34	08/15/2000	103900	190.910	7.754	25.233	0.090	29.957	300.119
35	08/15/2000	104000	191.517	7.742	25.400	0.090	29.957	299.918
36	08/15/2000	104100	190.925	7.738	25.567	0.091	29.959	299.906
37	08/15/2000	104200	191.459	7.740	25.684	0.092	29.958	300.674
38	08/15/2000	104300	191.121	7.750	25.714	0.092	29.959	300.703
39	08/15/2000	104400	191.262	7.761	25.658	0.091	29.961	300.785
40	08/15/2000	104500	191.491	7.767	25.606	0.091	29.959	300.800
41	08/15/2000	104600	191.139	7.770	25.419	0.090	29.960	300.936
42	08/15/2000	104700	191.094	7.768	25.455	0.090	29.958	302.150
43	08/15/2000	104800	190.934	7.765	25.403	0.090	29.957	302.169
44	08/15/2000	104900	191.393	7.761	25.424	0.090	29.958	301.531
45	08/15/2000	105000	191.354	7.755	25.549	0.091	29.956	301.210
46	08/15/2000	105100	191.140	7.745	25.542	0.091	29.956	301.185
47	08/15/2000	105200	191.245	7.756	25.663	0.091	29.953	301.028
48	08/15/2000	105300	191.150	7.748	25.543	0.091	29.954	301.046
49	08/15/2000	105400	191.512	7.748	25.760	0.092	29.952	301.534
50	08/15/2000	105500	191.468	7.749	25.897	0.092	29.952	301.520
51	08/15/2000	105600	191.295	7.739	25.917	0.092	29.952	300.145
52	08/15/2000	105700	191.057	7.739	25.886	0.092	29.951	299.225
53	08/15/2000	105800	191.267	7.745	25.689	0.091	29.952	299.247
54	08/15/2000	105900	191.392	7.752	25.760	0.092	29.950	300.721
55	08/15/2000	110000	191.419	7.750	25.628	0.091	29.952	300.692
56	08/15/2000	110100	191.418	7.745	25.702	0.092	29.952	300.549
57	08/15/2000	110200	191.111	7.755	25.727	0.091	29.953	300.565
58	08/15/2000	110300	191.066	7.765	25.627	0.091	29.953	300.530

HOK UNIT 1 DACT #6 RUN 1

59	08/15/2000	110400	191.298	7.777	25.816	0.092	29.952	301.539
60	08/15/2000	110500	191.406	7.771	25.998	0.092	29.951	301.702
61	08/15/2000	110600	191.277	7.768	25.952	0.092	29.951	301.234
62	/ /							
63	/ /	AVE	191.212	7.770	25.502	0.091	29.960	300.450

Pack Unit #1 BACT #6
Run 2

Record#	DATE	TIME	PC1GEN11	PC1CO212	PC1NOX13	PC1NOX14	PC1PRS15	PC1TMP16
1	08/15/2000	111900	191.495	7.775	25.848	0.092	29.952	301.256
2	08/15/2000	112000	191.288	7.793	25.597	0.091	29.949	301.274
3	08/15/2000	112100	191.096	7.807	25.746	0.091	29.949	300.495
4	08/15/2000	112200	191.288	7.799	25.687	0.091	29.946	299.795
5	08/15/2000	112300	191.074	7.782	25.619	0.091	29.950	299.727
6	08/15/2000	112400	191.309	7.786	25.292	0.090	29.951	299.991
7	08/15/2000	112500	190.865	7.764	25.240	0.090	29.949	299.936
8	08/15/2000	112600	191.069	7.756	25.261	0.090	29.950	300.061
9	08/15/2000	112700	191.506	7.746	25.391	0.090	29.948	300.211
10	08/15/2000	112800	191.109	7.751	25.570	0.091	29.952	300.203
11	08/15/2000	112900	191.076	7.755	25.305	0.090	29.948	300.841
12	08/15/2000	113000	191.276	7.750	25.187	0.090	29.949	300.798
13	08/15/2000	113100	191.293	7.732	25.089	0.089	29.949	301.227
14	08/15/2000	113200	191.300	7.735	25.157	0.090	29.949	301.504
15	08/15/2000	113300	191.310	7.744	25.311	0.090	29.948	301.609
16	08/15/2000	113400	190.978	7.746	25.270	0.090	29.946	301.989
17	08/15/2000	113500	191.058	7.748	25.282	0.090	29.946	302.008
18	08/15/2000	113600	191.445	7.738	25.352	0.090	29.946	303.093
19	08/15/2000	113700	191.336	7.725	25.439	0.091	29.948	303.268
20	08/15/2000	113800	191.112	7.738	25.696	0.092	29.947	303.000
21	08/15/2000	113900	191.082	7.737	25.439	0.091	29.945	302.317
22	08/15/2000	114000	191.401	7.733	25.324	0.090	29.945	302.274
23	08/15/2000	114100	191.209	7.749	25.369	0.090	29.943	301.899
24	08/15/2000	114200	190.981	7.737	25.081	0.089	29.944	301.776
25	08/15/2000	114300	191.040	7.740	25.098	0.089	29.944	302.294
26	08/15/2000	114400	191.234	7.747	25.379	0.090	29.944	303.365
27	08/15/2000	114500	191.305	7.749	25.219	0.090	29.945	303.400
28	08/15/2000	114600	191.080	7.755	25.168	0.090	29.941	302.029
29	08/15/2000	114700	191.152	7.740	24.920	0.089	29.944	301.817
30	08/15/2000	114800	191.054	7.739	25.039	0.089	29.943	301.232
31	08/15/2000	114900	191.122	7.743	25.095	0.089	29.941	300.154
32	08/15/2000	115000	191.300	7.739	24.882	0.089	29.942	300.141
33	08/15/2000	115100	191.290	7.739	25.140	0.090	29.943	301.460
34	08/15/2000	115200	191.192	7.737	25.073	0.089	29.945	301.925
35	08/15/2000	115300	191.004	7.749	25.158	0.090	29.943	301.464
36	08/15/2000	115400	191.157	7.747	25.093	0.089	29.944	300.937
37	08/15/2000	115500	191.327	7.740	25.022	0.089	29.944	300.917
38	08/15/2000	115600	190.999	7.754	25.291	0.090	29.942	300.934
39	08/15/2000	115700	191.033	7.762	25.513	0.091	29.942	300.940
40	08/15/2000	115800	191.225	7.763	25.625	0.091	29.942	301.175
41	08/15/2000	115900	191.209	7.759	25.433	0.090	29.942	301.404
42	08/15/2000	120000	191.405	7.771	25.566	0.091	29.944	301.402
43	08/15/2000	120100	191.085	7.767	25.465	0.090	29.944	301.529
44	08/15/2000	120200	191.132	7.764	25.329	0.090	29.944	301.563
45	08/15/2000	120300	191.296	7.755	25.198	0.090	29.943	300.745
46	08/15/2000	120400	191.386	7.762	25.287	0.090	29.944	299.802
47	08/15/2000	120500	191.680	7.756	25.443	0.090	29.947	300.209
48	08/15/2000	120600	191.272	7.763	25.491	0.091	29.943	302.081
49	08/15/2000	120700	191.078	7.762	25.540	0.091	29.944	302.049
50	08/15/2000	120800	191.065	7.771	25.886	0.092	29.944	301.876
51	08/15/2000	120900	190.905	7.778	25.913	0.092	29.943	301.797
52	08/15/2000	121000	190.920	7.766	25.897	0.092	29.944	301.723
53	08/15/2000	121100	191.074	7.665	25.857	0.093	30.123	300.805
54	08/15/2000	121200	190.904	4.700	14.995	0.088	29.945	300.762
55	08/15/2000	121300	191.082	7.292	23.440	0.089	29.942	300.860
56	08/15/2000	121400	191.305	7.471	24.039	0.089	29.946	300.923
57	08/15/2000	121500	191.104	7.522	24.231	0.089	29.944	300.984
58	08/15/2000	121600	190.928	7.525	24.369	0.089	29.944	302.222

PEAK BTUNIT #1 BACT #6 RUN 2

59	08/15/2000	121700	191.074	7.549	24.571	0.090	29.945	302.262
60	08/15/2000	121800	191.089	7.584	24.761	0.090	29.943	301.158
61	08/15/2000	121900	191.098	7.591	24.989	0.091	29.940	300.935
62	/ /							
63	/ /	AVE	191.173	7.674	25.081	0.090	29.948	301.341

Polk Unit #1 BACT #6 Run 3

Record#	DATE	TIME	PC1GEN11	PC1CO212	PC1NOX13	PC1NOX14	PC1PRS15	PC1TMP16
1	08/15/2000	122800	191.152	7.680	25.178	0.090	29.940	301.481
2	08/15/2000	122900	191.075	7.684	25.197	0.090	29.940	301.489
3	08/15/2000	123000	191.085	7.706	25.072	0.090	29.941	301.153
4	08/15/2000	123100	191.079	7.709	25.400	0.091	29.938	300.948
5	08/15/2000	123200	191.230	7.705	25.695	0.092	29.938	301.095
6	08/15/2000	123300	191.186	7.701	25.626	0.092	29.936	301.547
7	08/15/2000	123400	191.218	7.710	25.536	0.091	29.936	301.564
8	08/15/2000	123500	191.299	7.710	25.476	0.091	29.935	301.971
9	08/15/2000	123600	191.169	7.715	25.300	0.090	29.935	302.019
10	08/15/2000	123700	191.337	7.713	25.243	0.090	29.934	301.858
11	08/15/2000	123800	191.288	7.707	25.126	0.090	29.936	301.288
12	08/15/2000	123900	191.313	7.702	25.197	0.090	29.933	301.287
13	08/15/2000	124000	191.309	7.708	25.261	0.090	29.934	300.598
14	08/15/2000	124100	191.000	7.710	25.446	0.091	29.933	300.562
15	08/15/2000	124200	191.000	7.713	25.422	0.091	29.933	301.009
16	08/15/2000	124300	191.093	7.715	25.268	0.090	29.933	301.661
17	08/15/2000	124400	191.156	7.714	25.538	0.091	29.935	301.698
18	08/15/2000	124500	191.303	7.717	25.673	0.092	29.934	301.908
19	08/15/2000	124600	191.319	7.723	25.704	0.092	29.931	301.896
20	08/15/2000	124700	191.305	7.729	25.655	0.092	29.933	300.310
21	08/15/2000	124800	191.234	7.731	25.558	0.091	29.932	299.820
22	08/15/2000	124900	191.031	7.731	25.560	0.091	29.932	300.523
23	08/15/2000	125000	190.920	7.740	25.539	0.091	29.931	302.733
24	08/15/2000	125100	190.919	7.746	25.630	0.091	29.932	302.720
25	08/15/2000	125200	190.927	7.745	25.614	0.091	29.931	302.639
26	08/15/2000	125300	190.936	7.750	25.547	0.091	29.931	302.596
27	08/15/2000	125400	190.924	7.742	25.498	0.091	29.932	301.713
28	08/15/2000	125500	191.082	7.741	25.487	0.091	29.931	299.931
29	08/15/2000	125600	191.074	7.747	25.527	0.091	29.932	299.949
30	08/15/2000	125700	191.108	7.732	25.586	0.091	29.930	300.658
31	08/15/2000	125800	191.285	7.726	25.604	0.091	29.931	300.744
32	08/15/2000	125900	191.285	7.717	25.499	0.091	29.930	300.157
33	08/15/2000	130000	191.084	7.719	25.510	0.091	29.932	299.807
34	08/15/2000	130100	191.091	7.713	25.456	0.091	29.932	299.977
35	08/15/2000	130200	191.096	7.703	25.327	0.091	29.934	300.273
36	08/15/2000	130300	191.298	7.700	25.359	0.091	29.933	300.324
37	08/15/2000	130400	191.093	7.696	25.275	0.091	29.933	300.861
38	08/15/2000	130500	191.071	7.702	25.285	0.091	29.932	301.065
39	08/15/2000	130600	191.511	7.707	25.352	0.091	29.935	301.706
40	08/15/2000	130700	190.966	7.704	25.341	0.091	29.932	302.626
41	08/15/2000	130800	191.504	7.699	25.223	0.090	29.932	302.675
42	08/15/2000	130900	190.966	7.693	25.202	0.090	29.934	303.712
43	08/15/2000	131000	191.056	7.691	25.185	0.090	29.934	303.613
44	08/15/2000	131100	191.270	7.691	25.331	0.091	29.933	301.757
45	08/15/2000	131200	191.305	7.693	25.373	0.091	29.934	300.303
46	08/15/2000	131300	191.288	7.699	25.364	0.091	29.933	300.151
47	08/15/2000	131400	191.115	7.704	25.353	0.091	29.933	299.346
48	08/15/2000	131500	191.077	7.705	25.219	0.090	29.934	299.299
49	08/15/2000	131600	191.076	7.717	25.170	0.090	29.934	300.578
50	08/15/2000	131700	191.253	7.714	25.218	0.090	29.934	301.427
51	08/15/2000	131800	191.136	7.711	25.252	0.090	29.934	301.463
52	08/15/2000	131900	191.248	7.704	25.316	0.091	29.933	301.781
53	08/15/2000	132000	191.470	7.703	25.325	0.091	29.935	301.757
54	08/15/2000	132100	191.385	7.692	25.181	0.090	29.935	301.117
55	08/15/2000	132200	191.160	7.687	24.790	0.089	29.932	300.899
56	08/15/2000	132300	190.991	7.655	25.011	0.090	29.927	300.394
57	08/15/2000	132400	191.121	7.599	25.134	0.091	29.925	299.463
58	08/15/2000	132500	191.096	7.607	25.377	0.092	29.931	299.435

Peck Unit #1 Bact #6 Run 3

59	08/15/2000	132600	191.123	7.654	25.507	0.092	29.925	300.384
60	08/15/2000	132700	191.174	7.660	25.261	0.091	29.928	300.526
61	08/15/2000	132800	191.191	7.712	25.196	0.090	29.925	300.334
62	/ /							
63	/ /	AVE	191.162	7.706	25.370	0.091	29.933	301.124

APPENDIX C

UNCORRECTED REFERENCE METHOD DATA SHEETS

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %02
09:56	11.67
09:57	11.67
09:58	11.67
09:59	11.68
10:00	11.68
10:01	11.69
10:02	11.68
10:03	11.69
10:04	11.70
10:05	11.70
10:06	11.70
10:07	11.70

AVERAGE VALUES FOR THE LAST 12 MINUTES

10:07	11.69

COMMENTS: O2 TRAVERSE
WEST PORT

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %O2
10:12	11.68
10:13	11.68
10:14	11.69
10:15	11.69
10:16	11.69
10:17	11.70
10:18	11.70
10:19	11.67
10:20	11.68
10:21	11.68
10:22	11.68
10:23	11.67

AVERAGE VALUES FOR THE LAST 12 MINUTES

10:23	11.68

COMMENTS: O2 TRAVERSE
SOUTH PORT

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

CHAN 5
STACK

TIME	%02
10:30	11.68
10:31	11.68
10:32	11.68
10:33	11.68
10:34	11.69
10:35	11.70
10:36	11.71
10:37	11.70
10:38	11.70
10:39	11.70
10:40	11.70
10:41	11.70

AVERAGE VALUES FOR THE LAST 12 MINUTES

10:41	11.69

COMMENTS: O2 TRAVERSE
EAST PORT

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %O2
10:50	11.70
10:51	11.71
10:52	11.70
10:53	11.71
10:54	11.71
10:55	11.71
10:56	11.72
10:57	11.72
10:58	11.71
10:59	11.70
11:00	11.70
11:01	11.69

AVERAGE VALUES FOR THE LAST 12 MINUTES

11:01	11.71

O_2 TRAVERSE
NORTH PORT

Run #1

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %02	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%02
11:17	11.66	25.8	16.4
11:18	11.67	26.1	16.7
11:19	11.66	26.2	16.7
11:20	11.66	26.1	16.6
11:21	11.66	25.9	16.6
11:22	11.65	25.8	16.4
11:23	11.64	25.7	16.4
11:24	11.63	25.7	16.4
11:25	11.62	25.6	16.3
11:26	11.64	25.7	16.4
11:27	11.65	25.8	16.4
11:28	11.66	26.1	16.7
11:29	11.67	26.1	16.7
11:30	11.67	26.1	16.7
11:31	11.66	26.1	16.7
11:32	11.65	26.0	16.6
11:33	11.64	25.9	16.5
11:34	11.64	26.0	16.6
11:35	11.64	26.1	16.6
11:36	11.65	26.1	16.7
11:37	11.65	26.1	16.7
11:38	11.65	26.2	16.7
11:39	11.66	26.3	16.8
11:40	11.65	26.2	16.7
11:41	11.66	26.4	16.8
11:42	11.67	26.6	17.0
11:43	11.66	26.6	17.0
11:44	11.66	26.6	17.0
11:45	11.66	26.4	16.9
11:46	11.65	26.4	16.8
11:47	11.65	26.4	16.8
11:48	11.65	26.4	16.8
11:49	11.65	26.5	16.9
11:50	11.63	26.3	16.7
11:51	11.64	26.5	16.9
11:52	11.66	26.8	17.1
11:53	11.65	26.7	17.0
11:54	11.66	26.8	17.1
11:55	11.66	26.8	17.1
11:56	11.65	26.8	17.1
11:57	11.66	26.8	17.1
11:58	11.66	26.7	17.1
11:59	11.66	26.6	17.0
12:00	11.67	26.6	17.0
12:01	11.66	26.8	17.1
12:02	11.67	26.8	17.1
12:03	11.67	26.9	17.2
12:04	11.66	26.9	17.2
12:05	11.67	27.0	17.2
12:06	11.65	27.0	17.2
12:07	11.65	26.9	17.1
12:08	11.65	27.0	17.2
12:09	11.66	27.0	17.2
12:10	11.67	27.1	17.3
12:11	11.64	26.8	17.1

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %O2	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%O2
12:12	11.63	26.8	17.0
12:13	11.64	26.6	17.0
12:14	11.65	26.8	17.1
12:15	11.65	26.9	17.2
12:16	11.64	26.8	17.1

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

12:16	11.65	26.4	16.9

COMMENTS: END RUN ONE

RUN #2

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %O2	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%O2
12:29	11.66	26.7	17.0
12:30	11.64	26.7	17.0
12:31	11.65	26.9	17.2
12:32	11.65	27.0	17.2
12:33	11.64	27.0	17.2
12:34	11.64	26.8	17.1
12:35	11.66	26.9	17.2
12:36	11.65	26.9	17.2
12:37	11.65	26.9	17.1
12:38	11.65	26.9	17.2
12:39	11.65	26.8	17.1
12:40	11.65	27.0	17.2
12:41	11.66	26.9	17.2
12:42	11.65	26.8	17.1
12:43	11.64	27.1	17.2
12:44	11.65	27.2	17.3
12:45	11.66	27.4	17.5
12:46	11.66	27.4	17.5
12:47	11.64	27.4	17.4
12:48	11.64	27.4	17.4
12:49	11.64	27.1	17.3
12:50	11.64	27.0	17.2
12:51	11.64	27.0	17.2
12:52	11.64	27.2	17.3
12:53	11.64	27.2	17.4
12:54	11.64	27.3	17.4
12:55	11.65	27.6	17.6
12:56	11.64	27.7	17.7
12:57	11.66	27.7	17.7
12:58	11.65	27.7	17.7
12:59	11.63	27.5	17.5
13:00	11.63	27.3	17.4
13:01	11.62	27.1	17.2
13:02	11.61	27.0	17.2
13:03	11.62	27.0	17.2
13:04	11.63	27.2	17.3
13:05	11.63	27.3	17.4
13:06	11.62	27.4	17.5
13:07	11.64	27.6	17.6
13:08	11.62	27.6	17.5
13:09	11.63	27.8	17.7
13:10	11.65	27.9	17.8
13:11	11.64	27.6	17.6
13:12	11.63	27.6	17.5
13:13	11.63	27.7	17.6
13:14	11.62	27.5	17.5
13:15	11.63	27.5	17.5
13:16	11.63	27.6	17.6
13:17	11.62	27.5	17.5
13:18	11.62	27.8	17.7
13:19	11.63	28.2	17.9
13:20	11.66	28.3	18.1
13:21	11.65	27.7	17.7
13:22	11.65	27.9	17.8
13:23	11.63	27.4	17.4

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %O2	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%O2
13:24	11.63	27.5	17.5
13:25	11.63	27.8	17.7
13:26	11.63	27.9	17.8
13:27	11.64	28.1	17.9
13:28	11.64	28.2	18.0

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

13:28	11.64	27.4	17.4

COMMENTS: END RUN TWO

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000 Run #3

TIME	CHAN 5 STACK %02	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%02
13:39	11.65	27.9	17.8
13:40	11.64	27.8	17.7
13:41	11.64	27.8	17.7
13:42	11.65	27.9	17.8
13:43	11.64	28.0	17.8
13:44	11.64	28.0	17.8
13:45	11.65	28.2	18.0
13:46	11.64	28.0	17.8
13:47	11.64	28.0	17.9
13:48	11.63	28.1	17.9
13:49	11.64	28.2	17.9
13:50	11.64	28.1	17.9
13:51	11.64	27.9	17.8
13:52	11.64	27.7	17.6
13:53	11.64	27.3	17.4
13:54	11.64	27.9	17.7
13:55	11.64	27.8	17.7
13:56	11.64	27.8	17.7
13:57	11.64	27.9	17.8
13:58	11.64	27.9	17.8
13:59	11.62	27.9	17.8
14:00	11.63	28.0	17.8
14:01	11.62	27.8	17.7
14:02	11.63	27.8	17.7
14:03	11.61	27.8	17.6
14:04	11.61	27.8	17.6
14:05	11.62	27.9	17.7
14:06	11.62	28.0	17.8
14:07	11.62	27.9	17.8
14:08	11.62	27.9	17.7
14:09	11.62	27.8	17.7
14:10	11.60	27.9	17.7
14:11	11.62	28.1	17.8
14:12	11.63	28.4	18.1
14:13	11.62	28.3	18.0
14:14	11.61	28.2	17.9
14:15	11.61	28.1	17.8
14:16	11.59	28.0	17.7
14:17	11.59	27.9	17.7
14:18	11.58	28.1	17.8
14:19	11.59	28.2	17.9
14:20	11.59	28.2	17.9
14:21	11.59	28.2	17.9
14:22	11.60	28.4	18.0
14:23	11.61	28.5	18.1
14:24	11.61	28.6	18.2
14:25	11.62	28.0	17.8
14:26	11.62	28.0	17.8
14:27	11.59	27.9	17.7
14:28	11.58	27.7	17.6
14:29	11.58	27.8	17.6
14:30	11.58	27.7	17.5
14:31	11.58	27.8	17.6
14:32	11.58	27.9	17.6
14:33	11.58	27.8	17.6

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 5 STACK %02	CHAN 3 STACK ppmNOX	STACK ppmNOX @15%02
14:34	11.57	27.9	17.6
14:35	11.57	27.8	17.6
14:36	11.58	27.8	17.6
14:37	11.59	27.9	17.7
14:38	11.58	27.9	17.6

AVERAGE VALUES FOR THE LAST HOUR: 60 MINUTES OF VALID DATA

14:38	11.61	28.0	17.8

COMMENTS: END RUN THREE

APPENDIX D

SAMPLING EQUIPMENT CALIBRATIONS

APPENDIX D-1 LINEARITY CALIBRATIONS

APPENDIX D-2 DRIFT ASSESSMENT CALS

APPENDIX D-3 CYLINDER GAS CERTIFICATION

APPENDIX D-4 CONVERTER EFFICIENCY RESULTS

APPENDIX D-1

LINEARITY CALIBRATIONS

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: INITIAL DIRECT CAL

DATE : 08-15-2000 TIME: 07:45 - 08:06

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
3	STACK	ppmNOX	0.0	0.3
3	STACK	ppmNOX	24.9	24.5
3	STACK	ppmNOX	49.5	49.4
3	STACK	ppmNOX	81.8	81.5
5	STACK	%02	0.00	0.02
5	STACK	%02	11.96	12.11
5	STACK	%02	20.90	20.89

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: INITIAL SYSTEM CAL

DATE : 08-15-2000 TIME: 08:43 - 08:58

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
3	STACK	ppmNOX	0.0	0.1
3	STACK	ppmNOX	24.9	25.4
3	STACK	ppmNOX	49.5	49.6
3	STACK	ppmNOX	81.8	81.9
5	STACK	%02	0.00	0.03
5	STACK	%02	11.96	11.95
5	STACK	%02	20.90	20.92

APPENDIX D-2

DRIFT ASSESSMENT CALS

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: INITIAL BIAS CAL

DATE : 08-15-2000 TIME: 11:05 - 11:12

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	%02	0.00	0.02
5	STACK	%02	11.96	11.94
3	STACK	ppmNOX	0.0	0.4
3	STACK	ppmNOX	24.9	24.7

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: RUN ONE BIAS CAL

DATE : 08-15-2000 TIME: 12:16 - 12:22

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	%02	0.00	-0.02
5	STACK	%02	~~11.90~~ 11.96 pmo	11.94
3	STACK	ppmNOX	0.0	2.4
3	STACK	ppmNOX	24.9	25.5

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

RUN NUMBER: 1

SPAN VALUES: 100 ppm NOx
25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
NOx ZERO GAS	0.4	0.4	0.00	2.4	2.00	2.00
NOx UP-SCALE	24.7	24.7	0.00	25.5	0.80	0.80
O2 LOW GAS	0.02	0.02	0.00	-0.02	-0.16	-0.16
O2 UP-SCALE	11.94	11.94	0.00	11.94	0.00	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

RUN NUMBER: 1

SPAN VALUE: 25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
O2 ZERO GAS	0.02	0.02	0.00	-0.02	-0.16	-0.16
O2 UP-SCALE	11.94	11.94	0.00	11.94	0.00	0.00

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: RUN TWO BIAS CAL

DATE : 08-15-2000 TIME: 13:28 - 13:34

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	%02	0.00	-0.03
5	STACK	%02	11.96	11.93
3	STACK	ppmNOX	0.0	3.9
3	STACK	ppmNOX	24.9	26.9

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

RUN NUMBER: 2

SPAN VALUE: 25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
O2 ZERO GAS	0.02	-0.02	-0.16	-0.03	-0.20	-0.04
O2 UP-SCALE	11.94	11.94	0.00	11.93	-0.04	-0.04

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

RUN NUMBER: 2

SPAN VALUES: 100 ppm NOx
25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
NOx ZERO GAS	0.4	2.4	2.00	3.9	3.50	1.50
NOx UP-SCALE	24.7	25.5	0.80	26.9	2.20	1.40
O2 LOW GAS	0.02	-0.02	-0.16	-0.03	-0.20	-0.04
O2 UP-SCALE	11.94	11.94	0.00	11.93	-0.04	-0.04

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

CALIBRATION SUMMARY

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

REASON: RUN THREE BIAS CAL

DATE : 08-15-2000 TIME: 14:38 - 14:43

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
5	STACK	%02	0.00	-0.03
5	STACK	%02	11.96	11.92
3	STACK	ppmNOX	0.0	4.4
3	STACK	ppmNOX	24.9	27.1

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: POLK POWER STATION UNIT NO.1 BACT TEST

TEST DATE: 08/15/00

RUN NUMBER: 3

SPAN VALUES: 100 ppm NOx
25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
NOx ZERO GAS	0.4	3.9	3.50	4.4	4.00	0.50
NOx UP-SCALE	24.7	26.9	2.20	27.1	2.40	0.20
O2 LOW GAS	0.02	-0.03	-0.20	-0.03	-0.20	0.00
O2 UP-SCALE	11.94	11.93	-0.04	11.92	-0.08	-0.04

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

SYSTEM CALIBRATION BIAS AND DRIFT CALCULATIONS

SOURCE: POLK POWER STATION UNIT NO.1 BACT

TEST DATE: 08/15/00

RUN NUMBER: 3

SPAN VALUE: 25 % Oxygen

	------INITIAL VALUES------			------FINAL VALUES------		
	ANALYZER CAL. RESPONSE	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	SYSTEM CAL. RESPONSE	SYSTEM CAL. BIAS (% OF SPAN)	DRIFT (% OF SPAN)
O2 ZERO GAS	0.02	-0.03	-0.20	-0.03	-0.20	0.00
O2 UP-SCALE	11.94	11.93	-0.04	11.92	-0.08	-0.04

$$\text{SYSTEM CAL. BIAS} = \frac{\text{SYSTEM CAL. RESPONSE - ANALYZER CAL. RESPONSE}}{\text{SPAN}} \times 100$$

$$\text{DRIFT} = \frac{\text{FINAL SYSTEM CAL. RESPONSE - INITIAL CAL. RESPONSE}}{\text{SPAN}} \times 100$$

APPENDIX D-3

CYLINDER GAS CERTIFICATION

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: N31923
Project No.: 12-33126-001

Customer

TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure #G1; September, 1997.

Cylinder Number: ALM020393 **Certification Date:** 3/11/99 **Exp. Date:** 3/11/2002
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	11.96 %	+/- 1%	NIST
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes. Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2658	1/02/01	ALM031884	9.680 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/16804-O2	02/22/99	GC / TCD

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | Second Triad Analysis | Calibration Curve

OXYGEN

First Triad Analysis		
Date: 03/11/99	Response Unit: AREA	
Z1 = 0.0000	R1 = 247696	T1 = 306452
R2 = 248148	Z2 = 0.0000	T2 = 306564
Z3 = 0.0000	T3 = 306567	R3 = 248251
Avg. Concentration:	11.96 %	

Second Triad Analysis

Calibration Curve	
Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.99999	
Constants:	A = 0.00
B = 1.00	C = 0.00
D = 0.00	E = 0.00

Special Notes:

APPROVED BY: B. M. Becton
B.M. BECTON

RATA CLASS CES-HARD-3

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: Interference Free™ EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: N31923
Project No.: 12-35046-001

Customer

TAMPA ELECTRIC CO

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure #G1; September, 1997.

Cylinder Number: ALM019127 Certification Date: 7/19/99 Exp. Date: 7/18/2001
Cylinder Pressure***: 1994 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	81.13	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	81.82	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedure G1, September 1997. Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1683	4/03/03	ALM020566	48.90 PPM	NO/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	07/15/99	Scott Enhanced FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

NITRIC OXIDE

Date:07/12/99	Response Unit:PPM	
Z1 = 0.1222	R1 = 48.911	T1 = 80.909
R2 = 48.792	Z2 = -0.077	T2 = 81.157
Z3 = 0.1565	T3 = 81.343	R3 = 48.996
Avg. Concentration:	81.14	PPM

Second Triad Analysis

Date: 07/19/99	Response Unit: PPM	
Z1 = 0.2335	R1 = 48.805	T1 = 81.051
R2 = 48.938	Z2 = -0.005	T2 = 81.173
Z3 = 0.1145	T3 = 81.120	R3 = 48.957
Avg. Concentration:	81.11	PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

APPROVED BY: B.M. Becton

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: Interference Free™ EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: N75516
Project No.: 12-36341-002

Customer

TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure #G1; September, 1997.

Cylinder Number: ALM017813 Certification Date: 10/29/99 Exp. Date: 10/28/2001

Cylinder Pressure***: 1912 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	48.56	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	49.47	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocal procedure G1, September 1997. Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1683	4/03/03	ALM020566	48.90 PPM	NO/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	10/22/99	Scott Enhanced FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

NITRIC OXIDE

First Triad Analysis

Date:10/22/99	Response Unit:PPM	
Z1 = -0.01310	R1 = 48.79556	T1 = 48.39187
R2 = 48.89616	Z2 = 0.16660	T2 = 48.61919
Z3 = 0.08300	T3 = 48.62870	R3 = 49.00827
Avg. Concentration:	48.55	PPM

Second Triad Analysis

Date: 10/29/99	Response Unit: PPM	
Z1 = 0.14850	R1 = 49.06593	T1 = 48.55658
R2 = 48.76309	Z2 = 0.12020	T2 = 48.59997
Z3 = 0.04920	T3 = 48.54071	R3 = 48.87097
Avg. Concentration:	48.57	PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

APPROVED BY: _____
B.M. Becton

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: E-N31293
Project No.: 12-32332-014

Customer

TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure #G1; September, 1997.

Cylinder Number: ALM045301 Certification Date: 2/08/99 Exp. Date: 2/07/2001
Cylinder Pressure***: 1940 PSIG

COMPONENT	CERTIFIED CONCENTRATION		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	24.0	PPM	+/- 1%	NIST
NITROGEN - OXYGEN FREE		BALANCE		
NOX	24.9	BALANCE		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is inclusive of usual known error sources which at least include precision of the measurement processes. Product certified as +/- 1% analytical accuracy is directly traceable to NIST standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	4/09/99	ALM067006	21.48 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA53A/850658093	02/08/99	CHEMILUMINESCENT

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

NITRIC OXIDE

First Triad Analysis

Date: 02/01/99 Response Unit: PPM

Z1=0.0500	R1=21.580	T1=24.100
R2=21.510	Z2=0.0300	T2=23.990
Z3=0.0300	T3=24.010	R3=21.520

Avg. Concentration: 23.97 PPM

Second Triad Analysis

Date: 02/08/99 Response Unit: PPM

Z1=0.1900	R1=21.400	T1=24.050
R2=21.410	Z2=0.1600	T2=24.040
Z3=0.1600	T3=24.010	R3=21.410

Avg. Concentration: 24.09 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999990

Constants:	A=0.000000
B=1.000000	C=0.000000
D=0.000000	E=0.000000

Special Notes:

APPROVED BY: G T Bartlett
G BARTNETT

APPENDIX D-4

CONVERTER EFFICIENCY RESULTS

TECO
TAMPA ELECTRIC

CORPORATE ENVIRONMENTAL SERVICES
MEMORANDUM

TO: Quality Assurance File

FROM: R.A. Barthelette Jr.

DATE: 18, August, 2000

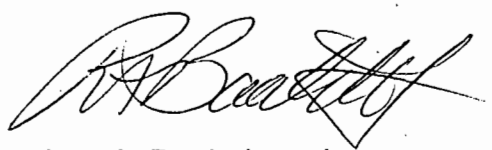
SUBJECT: NO2 to NO Converter Efficiency Test
40 CFR 60, Appendix A, Method 20
Section 5.6
Analyzer S/N 10A/R-19785-186

The following results detail the performance of the converter efficiency test on analyzer S/N 10A/R-19785-186:

Highest value recorded during the 30 minute test run =	36.9 ppm
Value recorded at the end of the 30 minute test run =	36.7 ppm
Percent of decrease =	0.5 %

These results indicate that the converter currently installed in the referenced analyzer meets the requirements of 40 CFR 60, Appendix A, Reference Method 20, § 5.6.

In accordance with the instructions contained in 40 CFR 60, Appendix A, Reference Method 20, sub-section 5.6.1; A sample was prepared using gas cylinder S/N ALM-017813 (certificate attached), diluted approximately 1:1 with 20.9% purified air. The sample was introduced into the analyzer through the sample port, and allowed to run for 30 minutes (08:09 – 08:39). The results from this run are attached for reference.



Robert A. Barthelette Jr.
Environmental Technician
Environmental Affairs - Causeway
Air Services

POLK POWER STATION UNIT NO.1 BACT TEST 08-15-2000

TIME	CHAN 3 STACK ppmNOX
08:10	36.5
08:11	36.5
08:12	36.4
08:13	36.5
08:14	36.6
08:15	36.6
08:16	36.7
08:17	36.7
08:18	36.7
08:19	36.7
08:20	36.6
08:21	36.7
08:22	36.6
08:23	36.8
08:24	36.8
08:25	36.8
08:26	36.8
08:27	36.8
08:28	36.8
08:29	36.8
08:30	36.9
08:31	36.8
08:32	36.9
08:33	36.9
08:34	36.8
08:35	36.7
08:36	36.7
08:37	36.7
08:38	36.6
08:39	36.7

AVERAGE VALUES FOR THE LAST 30 MINUTES

08:39	36.7

COMMENTS: END CONVERTER EFFICIENCY TEST
ANALYZER SERIAL NO. 10A/R-19785-186

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: Interference Free™ EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: N75516
Project No.: 12-36341-002

Customer

TAMPA ELECTRIC CO
RAY MCDARBY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure #G1; September, 1997.

Cylinder Number: ALM017813 Certification Date: 10/29/99 Exp. Date: 10/28/2001
Cylinder Pressure***: 1912 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	48.56	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	49.47	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocal procedure G1, September 1997. Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1683	4/03/03	ALM020566	48.90 PPM	NO/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	10/22/99	Scott Enhanced FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

NITRIC OXIDE

Date:10/22/99	Response Unit:PPM	
Z1=-0.01310	R1=48.79556	T1=48.39187
R2=48.89616	Z2=0.16660	T2=48.61919
Z3=0.08300	T3=48.62870	R3=49.00827
Avg. Concentration:	48.55	PPM

Second Triad Analysis

Date: 10/29/99	Response Unit: PPM	
Z1=0.14850	R1=49.06593	T1=48.55658
R2=48.76309	Z2=0.12020	T2=48.59997
Z3=0.04920	T3=48.54071	R3=48.87097
Avg. Concentration:	48.57	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.999990	
Constants:	A=0.000000
B=1.000000	C=0.000000
D=0.000000	E=0.000000

APPROVED BY: _____
B.M. Becton

APPENDIX E

TEST PARTICIPANTS

TEST PARTICIPANTS

Environmental Affairs

Robert Barthelette Jr.	Environmental Technician Test Team Leader
Craig Coronado	Technician

Polk Power Station

Michael Perkins	Environmental Coordinator