



TAMPA ELECTRIC

December 22, 2005

Mr. Jonathan Holtom, P.E.  
Florida Department of Environmental Protection  
Division of Air Resource Management  
111 South Magnolia Drive, Suite 4  
Tallahassee, Florida 32301

RECEIVED

DEC 23 2005

BUREAU OF AIR REGULATION

Via FedEx

Airbill No. 7907 5703 0156

**Re: Tampa Electric Company  
Polk Power Station  
Polk Unit 4 & 5 Construction Permit Application RAI Comments  
Project No. 1050233-018- AC, PSD-FL-363**

Dear Mr. Holtom:

Tampa Electric Company (TEC) has received your letter of incompleteness dated November 17, 2005 (received by TEC on November 29, 2005) requesting additional information with regard to the air construction permit application for the two new simple cycle combustion turbines at the Polk Power Station. This correspondence is intended to provide a response to each specific question raised by the Florida Department of Environmental Protection (FDEP). Additionally, TEC has identified a need to accelerate the construction schedule and therefore has decided to construct the new units for operation using natural gas only. Therefore, TEC is withdrawing the portions of the application addressing the use of fuel oil as an alternate fuel. TEC is now planning to begin construction on March 1, 2006. Since the application is now simplified significantly, TEC is requesting that FDEP issue the permit on or before that date.

For your convenience, TEC has restated each point and provided a response below each specific issue. Only the issues involving natural gas operation are addressed.

**FDEP Question 1**

**The proposed carbon monoxide (CO) emissions limits of 9.0 ppm on gas and 20.0 ppm on oil are higher than currently issued BACT determinations of 4.1 ppm on gas and 8.0 ppm on oil for similar units. It is the Department's intention to continue to issue all new BACT determinations with emission limits at least as stringent as those being currently and routinely demonstrated by similar existing sources. Please provide a copy of the manufacturer's guaranteed CO emissions rates for these units and any comments you may have regarding why these units should not be held to currently achievable CO emissions rates.**

TEC Response 1

At baseload operation during natural gas firing, Units 4 and 5 CO exhaust concentrations are guaranteed by GE to be 9 parts per million by volume dry (ppmvd). This limit is lower than prior FDEP BACT determinations for the Polk Unit 2 and 3 simple-cycle CTs currently onsite. The existing units are permitted to comply at baseload operation during natural gas firing with a CO exhaust concentration of 12 parts per million by volume dry (ppmvd). TEC is requesting the proposed limit because it is the manufacturer guaranteed value for the specific units addressed in the application and will provide a margin of compliance with consideration being given to long-term performance and the frequent start-ups and shutdowns associated with simple-cycle operation. The GE guaranteed emission rate for CO while operating on gas is located in the Attachment 1.

FDEP Question 2

**The proposed nitrogen oxide (NO<sub>x</sub>) emissions limit of 10.5 ppm on gas is higher than currently issued BACT determinations of 9.0 ppm for similar units. Please provide a copy of the manufacturer's guaranteed NO<sub>x</sub> emissions rate for these units while firing gas. Also include the manufacturer's guarantee for firing oil and any comments you may have regarding why these units should not be held to currently achievable NO<sub>x</sub> emissions rates.**

TEC Response 2

During normal operation and natural gas firing, Units 4 and 5 NO<sub>x</sub> exhaust concentrations are projected to not exceed 10.5 ppmvd, corrected to 15-percent oxygen. This concentration is consistent with prior FDEP BACT determinations for the Polk Unit 2 and 3 simple-cycle CTs currently onsite. These units are permitted to comply at baseload operation, during natural gas firing, with NO<sub>x</sub> exhaust concentrations of 10.5 ppmvd. The 10.5 ppmvd level stated in the permit application is based on GE's guarantee for initial performance of 9 ppm with consideration being given to long-term performance and the frequent start-ups and shutdowns associated with simple-cycle operation. The GE guaranteed emission rates for NO<sub>x</sub> while operating on gas are located in the Attachment 1. TEC is requesting the following language in the permit to demonstrate BACT and to be consistent with the other simple-cycle units permitted at Polk Power Station:

*While firing Natural Gas: The emission rate of NO<sub>x</sub> in the exhaust gas shall not exceed 10.5 ppm @15% O<sub>2</sub> on a 24 hr block average as measured by the continuous emission monitoring system (CEMS). In addition, NO<sub>x</sub> emissions calculated as NO<sub>2</sub> shall not exceed 59 pounds per hour (at ISO conditions) and 9 ppmvd @15% O<sub>2</sub> to be demonstrated by the initial "new and clean" GE performance stack test. [Rule 62-212.400, F.A.C.]*

*Notwithstanding the applicable NO<sub>x</sub> limit during normal operation, reasonable measures shall be implemented to maintain the concentration of NO<sub>x</sub> in the exhaust gas at 9 ppmvd at 15% O<sub>2</sub> or lower. Any tuning of the combustors for Dry Low NO<sub>x</sub> operation while firing gas shall result in initial subsequent NO<sub>x</sub> concentrations of 9 ppmvd @15% O<sub>2</sub> or lower. [Rules 62-212.400 and 62-4.070, F.A.C.]*

**FDEP Question 3**

**Please provide an anticipated schedule for operation of these simple cycle units. Include the projected number of start ups and shut downs for a given year and quantify the emissions for each start up and each shut down. Are multiple start ups and shut down cycles anticipated during any single day? Does the plant currently have a gas contract that will provide sufficient gas for these units to operate for the 4,380 hours of operation that has been requested? Considering the gas contract, how often is it anticipated that fuel switching will be required?**

**TEC Response 3**

It is anticipated that the new simple cycle units will be operated according to the typical peaking unit type of schedule (similar to Polk Units 2 and 3). Based on current projections, the new units are each expected to have approximately 70 startup/shutdown cycles per year. Since the typical load demand profile has one peak in the morning and another peak in the evening, it is possible that the units will have multiple startup/shutdown cycles in a given day to accommodate this load demand. The emissions during startup and shutdown of a simple-cycle unit are not significant due to the short duration of these events. TEC's gas supply is anticipated to be sufficient to operate the units as described in the permit application.

Based on our recent discussion, the primary nature of this request is relative to excess emissions. As described in Attachment D (proposed Condition 24) of the permit application, TEC is requesting the following language in the permit to accommodate the planned operation schedule and to be consistent with the other simple-cycle units permitted at Polk Power Station:➤

*Excess emissions resulting from startup, shutdown and malfunction of any emissions unit shall be permitted providing: (1) best operational practices to minimize emissions are adhered to, and (2) the duration of excess emissions shall be minimized but in no case exceed 120 minutes in any 24 hour period with one unit cycle and 60 minutes for each additional startup within the same 24 hour period.*

*In other words, excess emissions shall be limited to 120 minutes in any 24 hour period in which the unit cycles once, 180 minutes in which the unit cycles twice, and 240 minutes in any 24 hour period in which the unit cycles three times. The duration of excess emissions shall be minimized but in no case exceed these durations unless specifically authorized by the Department. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.*

**FDEP Question 4**

**The application contains a statement that the nameplate generation capacity for these units is 175.8 MW. However, the requested allowable capacity is 165 MW. Please explain the reason for this difference.**

**TEC Response 4**

The *nominal* generation capacity of the GE 7FA combustion turbines (CTs) is 165 megawatts (MW). The generator nameplate rating is 175.8 MW. TEC requests permit approval to operate the CTs up to the generator nameplate rating of 175.8 MW.

**FDEP Question 5**

**It is our understanding that these units may have been previously permitted, but never operated. Please provide information on the age and origin of these units, including information regarding the original permittee.**

**TEC Response 5**

The two simple cycle units TEC is requesting authorization to install at the Polk Power Station had been previously permitted as combined cycle units by TECO Power Services, one of TECO Energy's subsidiaries during that period. The PSD permit was granted and issued on August 16, 2001 by the Mississippi Department of Environmental Quality. The purchase contract with GE for these units was signed on July 21, 2000. These units were significantly constructed at the McAdams facility in Mississippi but have never been operated. Please see the permit for these units in Attachment 2.

**FDEP Question 6**

**Please provide a more detailed plot plan. The Department is requesting both an electronic version (preferably a .dwg file or file compatible with AutoCAD2006) and an updated paper plan (preferably 2 x 3 feet). Please grid the plot plan in UTM coordinates and highlight the buildings, structures and stacks.**

**TEC Response 6**

Attachment 3 contains a D-size plot plan with the requested information. This was forwarded on December 20, 2005 via email to Mr. Jonathan Holtam as an Autocad file also.

**FDEP Question 7**

**Since the previous permit application for TECO Polk Power Station (Combustion Turbines 2 and 3) was processed, the standard for the fence line receptor grid has become more refined within the Department, with at least 100 meter spacing along the boundary required. Please update the Class II modeling to reflect the 100 meter spacing requirement.**

TEC Response 7

In response to a prior verbal request from the Department, the fence line receptor grid resolution was increased and an updated assessment of Class II area air quality impacts was submitted to the Department via email on November 30, 2005. Model results remain essentially unchanged from the original assessment. All impacts continue to remain well below the PSD significant impact levels (SILs) and *de-minimis* ambient impact levels. A hardcopy of the revised Section 7.0 Air Quality Analysis Impact tables is provided as Attachment 4 to this RAI response letter.

**FDEP Question 8**

**In Section 10.10, page 10-6, the modeled emissions sources for the Class I impact modeling were based on Case 4 instead of Cases 1, 2 or 9, which were the worst cases in the Class II modeling. Please explain.**

TEC Response 8

As stated previously, TEC is withdrawing its request to combust fuel oil in Units 4 and 5. Since natural gas-firing particulate matter (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions are significantly lower compared to oil-firing, Class I impacts for proposed Units 4 and 5 while firing natural gas will also be significantly lower than the impacts that were previously provided for oil-firing. At 100 percent load and 59°F, Units 4 and 5 PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> hourly emission rates during natural gas-firing are 50, 21.6, and 31.2 percent of the corresponding oil-firing rates, respectively. Accordingly, Class I PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> during natural gas-firing will be much lower than the insignificant impacts previously shown for oil-firing; reference Table 10-11 of the October 2005 air construction permit application.

**FDEP Question 9**

**On page 10-1 and Table 10-8, the maximum change in light extinction coefficient (B<sub>ext</sub>) at the Chassahowitzka NWR is stated to be 9.33 percent. However, on page 10-8, the maximum change is stated to be 11.01 percent. Please explain this discrepancy.**

TEC Response 9

As stated previously, TEC is withdrawing its request to combust fuel oil in Units 4 and 5. Since natural gas-firing PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emissions are significantly lower compared to oil-firing, Class I regional haze impacts during natural gas-firing will also be lower. At 100 percent load and 59°F, the maximum predicted change in light extinction coefficient (B<sub>ext</sub>) in the Chassahowitzka NWR is 1.6 percent.

**FDEP Question 10**

**Please explain why three different 1996 CALPUFF modeling runs were performed (January, February to July, and August to December).**

Mr. Jonathan Holtom  
December, 22, 2005  
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TEC Response 10

Multiple CALPUFF runs were performed for 1996 due to a CALPUFF model constraint on the maximum number of CALMET files (i.e., a maximum of 12). The number of 1996 year CALMET files provided by the Department for Chassahowitzka NWR air quality assessments exceeded this CALPUFF model constraint.

FDEP Question 11


**Please discuss strategies for reducing SO<sub>2</sub>, NO<sub>x</sub> and PM<sub>10</sub> emissions sufficiently to lower the predicted B<sub>ext</sub> in the Chassahowitzka NWR to less than 5.0 percent.**

TEC Response 11

As stated previously, TEC is withdrawing its request to combust fuel oil in Units 4 and 5. Since natural gas-firing PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emissions are significantly lower compared to oil-firing, Class I regional haze impacts during natural gas-firing will also be lower. Based on natural gas-firing at 100 percent load and 59°F, the maximum predicted change in light extinction coefficient (B<sub>ext</sub>) in the Chassahowitzka NWR is 1.6 percent; well below the FLM guideline of 5.0 percent.

TEC understands that with the submission of this additional information, the Department will continue to process the Polk Unit 4 and 5 air construction permit application for Polk Power Station in an expeditious manner. If you have any further questions or need additional clarification regarding this air construction permit application, please do not hesitate to call Raiza Calderon or me at (813) 228-4369.

Sincerely,



Byron T. Burrows, P.E.  
Manager - Air Programs  
Environmental, Health & Safety

EA/rlk/RC208

Enclosures

cc: Hamilton Oven

# **ATTACHMENT 1**

**GE Emission Rate Guarantees**

# e General Electric, Power Systems

## GE Gas Turbine Model 7241 DLN Standard Emissions Guarantees

Fuel	Cust. Gas	Cust. Gas	Cust. Gas	Cust. Gas
Ambient temperature, degF	18	18	18	18
% of Base load at ambient	100%	75%	50%	40%
NOx ppmvd @ 15% O2	9.0	9.0	9.0	9.0
NOx, lb/hr	63.0	51.0	40.0	35.0
CO ppmvd, no O2 correction	9.0	9.0	9.0	9.0
CO, lb/hr	32.0	25.0	21.0	18.0

Fuel	Cust. Gas	Cust. Gas	Cust. Gas	Cust. Gas
Ambient temperature, degF	59	59	59	59
% of Base load at ambient	100%	75%	50%	40%
NOx ppmvd @ 15% O2	9.0	9.0	9.0	9.0
NOx, lb/hr	59.0	47.0	38.0	33.0
CO ppmvd, no O2 correction	9.0	9.0	9.0	9.0
CO, lb/hr	29.0	24.0	20.0	18.0

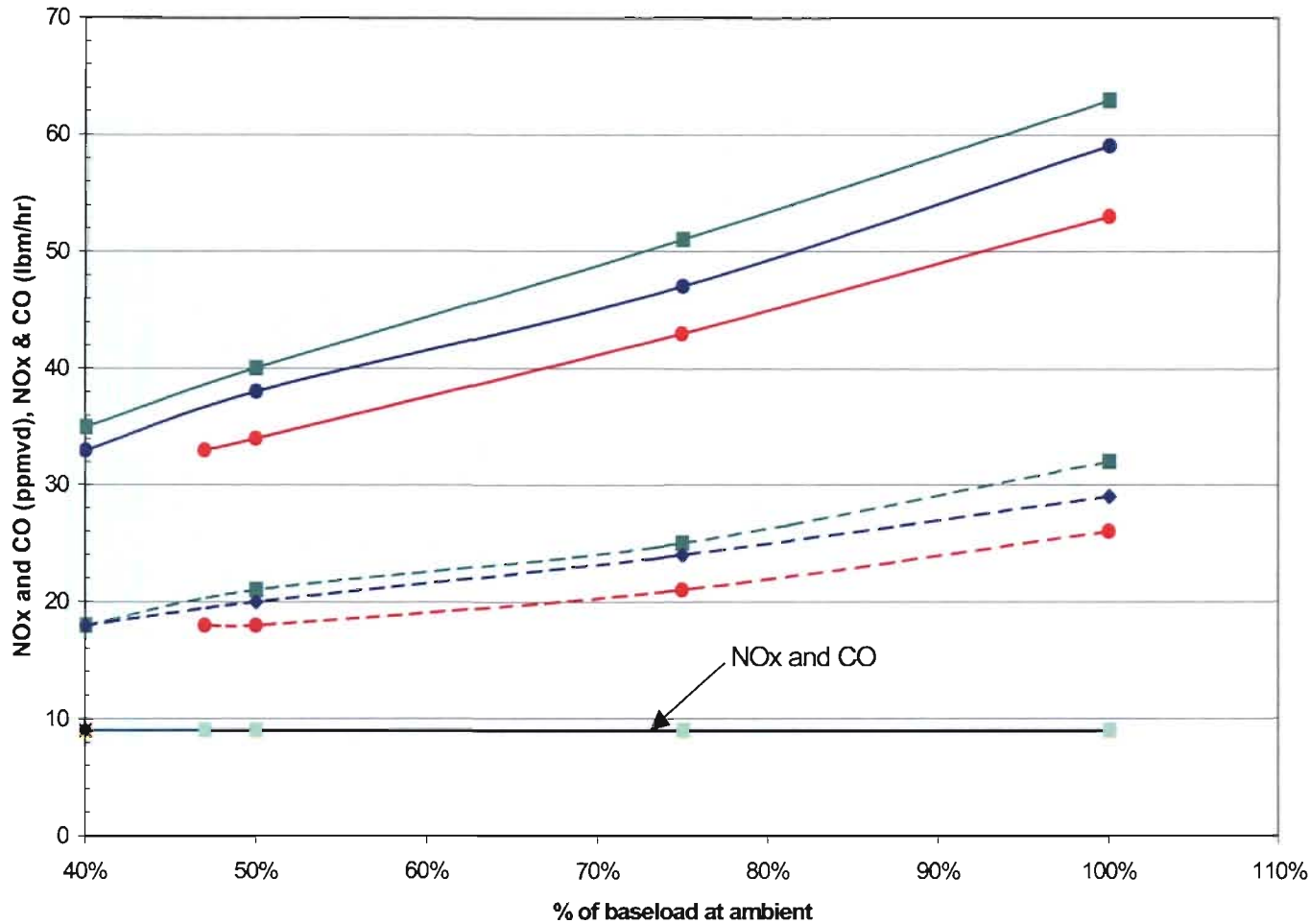
Fuel	Cust. Gas	Cust. Gas	Cust. Gas	Cust. Gas
Ambient temperature, degF	100	100	100	100
% of Base load at ambient	100%	75%	50%	47%
NOx ppmvd @ 15% O2	9.0	9.0	9.0	9.0
NOx, lb/hr	53.0	43.0	34.0	33.0
CO ppmvd, no O2 correction	9.0	9.0	9.0	9.0
CO, lb/hr	26.0	21.0	18.0	18.0



e

# General Electric, Power Systems

7241 NOx and CO Emissions vs % load  
Gas fuel @ 18, 59 and 100F Ambient



- NOx ppmvd @ 15% O2 @ 18F
- NOx lbm/hr @ 18F
- CO, ppmvd @ 18F
- CO lb/hr @ 18F
- NOx, ppmvd @ 15% O2, 59F
- NOx, lb/hr @ 59F
- CO, ppmvd @ 59F
- CO, lb/hr @ 59F
- NOx, ppmvd @ 15% O2, 100F
- NOx, lb/hr @ 100F
- CO, ppmvd @ 100F
- CO lb/hr @ 100F

Nominal Guarantee levels  
Flaired compressor  
3" inlet, 5.5" exhaust loss at Base

12/13/05

GE Proprietary

# **ATTACHMENT 2**

McAdams Power Station Air Permit

**STATE OF MISSISSIPPI  
AIR POLLUTION CONTROL**

**PERMIT**

**AND PREVENTION OF SIGNIFICANT  
DETERIORATION AUTHORITY  
TO CONSTRUCT AIR EMISSIONS EQUIPMENT**

**THIS CERTIFIES THAT**

**TPS McAdams, LLC  
Highway 14 and County Road 4167  
McAdams, Mississippi**

has been granted permission to construct air emissions equipment to comply with the emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

**MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD**

  
\_\_\_\_\_  
**AUTHORIZED SIGNATURE**

**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY**

Issued: August 16, 2001

Permit No.: 0120-00033

Modified:     MAY 17 2002

**Part I.**  
**GENERAL CONDITIONS**

1. This permit does not authorize any activities not identified in the application.
2. All air pollution control facilities shall be designed and constructed such as to allow proper operation and maintenance of the facilities.
3. The necessary facilities shall be constructed so that solids removed in the course of control of air emissions may be disposed of in a manner such as to prevent the solids from becoming windborne and to prevent the materials from entering State waters without the proper environmental permits.
4. The air pollution control facilities shall be constructed such that diversion from or bypass of collection and control facilities is not needed except as provided for in Regulation APC-S-1, "Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants", Section 10.
5. The construction of facilities shall be performed in such a manner as to reduce both point source and fugitive dust emissions to a minimum.
6. The permittee shall allow the Mississippi Department of Environmental Quality Office of Pollution Control and the Mississippi Environmental Quality Permit Board and/or their authorized representatives, upon the presentation of credentials:
  - a. To enter upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit, and
  - b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air emission.
7. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to :
  - a. Violation of any terms or conditions of this permit.
  - b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
  - c. A change in any condition that required either a temporary or permanent reduction or elimination of authorized air emission.

8. Except for data determined to be confidential under the Mississippi Air & Water Pollution Control Law, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Environmental Quality Office of Pollution Control.
9. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
10. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the air cleaning facility, or from compliance with the applicable statutes of the State, or with local laws, regulations, or ordinances.
11. This permit may only be transferred upon approval of the Mississippi Environmental Quality Permit Board.
12. This permit is for air pollution control purposes only.
13. Approval to construct will expire should construction not begin within eighteen (18) months of the issuance of this permit, or should construction be suspended for eighteen (18) months.
14. Prior to startup of air emissions equipment at this source, the permittee must obtain a Permit to Operate and submit certification that construction was completed in accordance with the approved plans and specifications.

**Part II.**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-001, the 1722 MMBTUH combined-cycle combustion turbine with a heat recovery steam generator (HRSG) with a dry low NOx burner (283 MMBTUH) and selective catalytic reduction (SCR) for control of NOx emissions (Ref. HRSG-01).

These emission points are subject to the Acid Rain Program Regulations as specified in 40 CFR 72-78, and the permittee must comply with all applicable requirements of said standards.

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

<b>Particulate Matter</b>	23.0 lbs/hr and 100.7 tons/year, as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.
<b>PM<sub>10</sub></b>	23.0 lbs/hr and 100.7 tons/year as determined by EPA Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.
<b>Sulfur Dioxide</b>	4.0 lbs/hr and 17.52 tons/year, as determined by EPA Reference Method 6C, 40 CFR 60, Appendix A.
<b>Nitrogen Oxides</b>	3.5 PPM at 15% oxygen on a dry basis, not to exceed 29.0 lbs/hr, both limits are based on a 24-hour rolling average, and 127.0 tons/year, as determined by EPA Reference Method 20, 40 CFR 60, Appendix A.
<b>Carbon Monoxide</b>	11.8 PPM at 15% oxygen on a dry basis, not to exceed 59.4 lbs/hr, both limits are based on a 24-hour rolling average, and 260.2 tons/year, as determined by EPA Reference Method 10, 40 CFR 60, Appendix A.
<b>Volatile Organic Compounds</b>	4.1 PPM at 15% oxygen on a dry basis, not to exceed 11.8 lbs/hr, both limits are based on a 24-hour rolling average, and 51.7 tons/year as determined by EPA Reference Method 25 or 25A, 40 CFR 60, Appendix A.

**Part II**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**  
**Continued**

**Opacity**                      **10% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.**

**All test methods specified above shall be those versions, or their approved equivalents, which are in effect August 16, 2000.**

**Part II.**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-002, the 1722 MMBTUH combined-cycle combustion turbine with a heat recovery steam generator (HRSG) with a dry low NOx burner (283 MMBTUH) and selective catalytic reduction (SCR) for control of NOx emissions (Ref. HRSG-02).

These emission points are subject to the Acid Rain Program Regulations as specified in 40 CFR 72-78, and the permittee must comply with all applicable requirements of said standards.

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Particulate Matter	23.0 lbs/hr and 100.7 tons/year, as determined by EPA Reference Methods 1-5, 40 CFR 60, Appendix A.
PM <sub>10</sub>	23.0 lbs/hr and 100.7 tons/year as determined by EPA Reference Method 201 or 201A in conjunction with Reference Method 202, 40 CFR 51, Appendix M.
Sulfur Dioxide	4.0 lbs/hr and 17.52 tons/year, as determined by EPA Reference Method 6C, 40 CFR 60, Appendix A.
Nitrogen Oxides	3.5 PPM at 15% oxygen on a dry basis, not to exceed 29.0 lbs/hr, both limits are based on a 24-hour rolling average, and 127.0 tons/year, as determined by EPA Reference Method 20, 40 CFR 60, Appendix A.
Carbon Monoxide	11.8 PPM at 15% oxygen on a dry basis, not to exceed 59.4 lbs/hr, both limits are based on a 24-hour rolling average, and 260.2 tons/year, as determined by EPA Reference Method 10, 40 CFR 60, Appendix A.
Volatile Organic Compounds	4.1 PPM at 15% oxygen on a dry basis, not to exceed 11.8 lbs/hr, both limits are based on a 24-hour rolling average, and 51.7 tons/year as determined by EPA Reference Method 25 or 25A, 40 CFR 60, Appendix A.



**Part II**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**  
**Continued**

**Opacity**                      **10% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.**

**All test methods specified above shall be those versions, or their approved  
equivalents, which are in effect August 16, 2000.**

**Part II.**

**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning August 16, 2000, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-003, the 83.0 MMBTUH auxiliary boiler with a dry low NO<sub>x</sub> burner (Ref. AB-03).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Opacity   40% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect August 16, 2000.

**Part II.**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning August 16, 2000, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-004, the 12-cell cooling tower (Ref. CT-04 to CT-15).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

<b>Opacity</b>	<b>40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.</b>
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All test methods specified above shall be those versions, or their approved equivalents, which are in effect August 16, 2000.



**Part II.**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning August 16, 2000, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-006, the diesel fuel-fired emergency generator, 500 kW capacity (Ref. EG-23).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Opacity                                      40% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect August 16, 2000.

**Part II.**

**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning August 16, 2000, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-007, the diesel fuel-fired fire water pump engine, 260 bhp capacity (Ref. FP-24).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Opacity	40% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.
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All test methods specified above shall be those versions, or their approved equivalents, which are in effect August 16, 2000.

**Part II.**  
**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-008, the 4.5 MMBTU/hr natural gas-fired fuel preheater (Ref. FGH-01).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

**Opacity** . . . . . **10% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.**

All test methods specified above shall be those versions, or their approved equivalents, which are in effect May 17, 2002.

**Part II.**

**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-009, the 4.5 MMBTU/hr natural gas-fired fuel preheater (Ref. FGH-02).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

<b>Opacity</b>	<b>10% as determined by EPA Reference Method 9, 40 CFR 60, Appendix A.</b>
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All test methods specified above shall be those versions, or their approved equivalents, which are in effect May 17, 2002.



Part II.

**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-010, the 4.5 MMBTU/hr natural gas-fired fuel preheater (Ref. FGH-03).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Opacity                                 10% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect May 17, 2002.

**Part II.**

**EMISSION LIMITATIONS AND MONITORING REQUIREMENTS**

Beginning May 17, 2002, the permittee is authorized to construct air emissions equipment for the emission of air contaminants from Emission Point AA-011, the 4.5 MMBTU/hr natural gas-fired fuel preheater (Ref. FGH-04).

The air emissions equipment shall be constructed to comply with the emission limitations and monitoring requirements specified below:

**EMISSIONS LIMITATIONS**

Opacity : 10% as determined by EPA Reference Method 9,  
40 CFR 60, Appendix A.

All test methods specified above shall be those versions, or their approved equivalents, which are in effect May 17, 2002.

**Part III.**  
**OTHER REQUIREMENTS**

- (1) The combustion turbines, associated with Emission Points AA-001 and AA-002, are subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A - General Provisions, and the specific requirements outlined in 60.330, Subpart GG - Standards of Performance for Stationary Gas Turbines.

Standards

- (a) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.332.

Monitoring Requirements

- (b) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.334.

Test Methods and Procedures

- (c) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart GG, Section 60.335.

- (2) The duct burners, associated with Emission Points AA-001 and AA-002, are subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A - General Provisions and Subpart Da - Standards of Performance for Electric Utility Steam Generating Units.

Standards

- (a) The permittee shall comply with the standards for particulate matter listed in 40 CFR 60, Subpart Da, Section 60.42a(g).
- (b) The permittee shall comply with the standards for sulfur dioxide listed in 40 CFR 60, Subpart Da, Section 60.43a(b).
- (c) The permittee shall comply with the standards for nitrogen oxides listed in 40 CFR 60, Subpart Da, Section 60.44a(a).

Monitoring Requirements

- (d) The permittee shall comply with the requirements listed in 40 CFR 60,

Subpart Da, Section 60.47a.

Reporting Requirements

- (e) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart A, Section 60.7 and 40 CFR 60, Subpart Da, Section 60.49a.
- (3) For Emission Points AA-001 and AA-002, the permittee shall demonstrate compliance with nitrogen oxides, and carbon monoxide emission limitations by stack testing in accordance with EPA Reference Methods 20 and 10 and the test methods and procedures as listed in 40 CFR 60.335 or their approved equivalents and submittal of a stack test report within 180 days of startup, but no later than 60 days of attaining maximum production rate and biennially thereafter.
- A pretest conference at least thirty (30) days prior to the scheduled test date is needed to ensure that all test methods and procedures are acceptable to the Office of Pollution Control. Also, the Office of Pollution Control must be notified prior to the scheduled test date. At least TEN (10) DAYS notice should be given so that an observer may be scheduled to witness the test(s).
- (4) For Emission Points AA-001 through AA-003, the permittee shall not burn any fuel which contains sulfur in excess of 0.05 percent by weight.
- (5) For Emission Points AA-001 through AA-003, the permittee shall not use any fuel other than natural gas.
- (6) For each turbine, the permittee shall install, calibrate, maintain and operate continuous monitoring systems for NO<sub>x</sub> (as specified in 40 CFR 60.334, Appendix B and 40 CFR 75), CO (as specified in 40 CFR 60, Appendix B, and 40 CFR 75) and O<sub>2</sub> (as specified in 40 CFR 60, Appendix B, and 40 CFR 75). These monitoring systems must comply with all applicable requirements specified in §60.334, §60.13, and Appendix B of 40 CFR 60 and 40 CFR 75. In addition, the permittee must comply with the reporting and recordkeeping requirements specified in 40 CFR 60, §60.7 and 40 CFR 75.
- (7) For Emission Point AA-003, the permittee is limited to 1000 hours per year operation on a 12 month rolling total, and is restricted from burning fuel other than natural gas.
- (8) For each of Emission Points AA-006 and AA-007, the permittee is limited to 250 hours per year operation on a 12 month rolling total.
- (9) For Emission Points AA-003, AA-006, and AA-007, the permittee shall submit semi-annual reports showing the hours of operation on a daily basis

and on a 12 month rolling total. Each report is due by January 31 and July 31 of each calendar year. All records required by this permit shall be maintained for review for at least five years from the date of the sampling, measurement, or report.

- (10) For Emission Point AA-003, the boiler is subject to and shall comply with all applicable requirements of the New Source Performance Standards, as described in 40 CFR 60, Subpart A - General Provisions and Subpart Dc - Standards of Performance for Small Industrial-Commercial Steam Generating Units.

Reporting Requirements

- (a) The permittee shall comply with the requirements listed in 40 CFR 60, Subpart A, Section 60.7 and 40 CFR 60, Subpart Dc, Section 60.48c.
- (11) For the entire facility, the permittee is limited to 9.5 tons/year of formaldehyde emissions and 16.0 tons/year of total Hazardous Air Pollutant (HAP) emissions. Tons per year emission rates are determined for each consecutive 12-month period.
- (12) For Emission Points AA-001 and AA-002, the permittee shall monitor formaldehyde emissions by performing a one time stack test in accordance with EPA Reference Method 308 or any other EPA approved method within six months of permit issuance. The test shall be performed while each turbine is operating at peak load conditions and without duct burning. The permittee shall submit a written test protocol at least thirty (30) days prior to the intended test date(s) to ensure that all test methods and procedures are acceptable to the DEQ. Also, the permittee shall notify the DEQ in writing at least ten (10) days prior to the intended test date(s) so that an observer may be afforded the opportunity to witness the test. The permittee shall submit a test report of the results of the stack test within forty-five (45) days of the test date.

# **ATTACHMENT 3**

**Polk Power Station Plot Plan**

HORIZONTAL AND VERTICAL CONTROL				
POINT NO.	NORTHING	EASTING	ELEVATION	REMARKS/DESCRIPTION
R-1*	1224068.07	637079.81	133.85	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-2*	1224114.37	643437.68	137.88	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-3*	1223782.19	648677.68	139.82	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-4*	1230763.10	636984.34	105.59	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-5*	1230579.64	642843.12	132.56	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-6*	1230500.81	648091.89	144.18	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-7	1234423.39	651694.02	143.59	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-8	1230842.47	659551.65	182.00	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-9	1238968.15	656730.21	154.02	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-10*	1240409.75	657158.83	148.58	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-11*	1241912.52	658817.22	153.59	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-12	1239638.27	665953.83	158.37	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-13*	1241556.32	665863.87	147.11	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-14	1232070.43	667941.18	140.85	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-15*	1223961.88	668818.18	138.70	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-16*	1222685.52	659854.43	—	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-17*	1223633.57	654054.61	154.39	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-18*	1233309.30	636889.60	102.40	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-20*	1233221.05	642535.40	116.10	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-21*	1233368.78	647314.22	123.70	1/2" CAP-IRON ROD STAMPED W/ LB-3221
R-22*	1236359.01	649781.04	169.20	1/2" CAP-IRON ROD STAMPED W/ LB-3221
BENCHMARK #1*	1242506.4	664599.4	143.69	U.S. COAST & GEODETIC SURVEY DISK SET IN TOP OF CONCRETE MONUMENT STAMPED (077 1934).
BENCHMARK #2	1234514.4	653994.4	143.76	U.S. COAST & GEODETIC SURVEY DISK SET IN TOP OF CONCRETE MONUMENT STAMPED (9-108 1942).

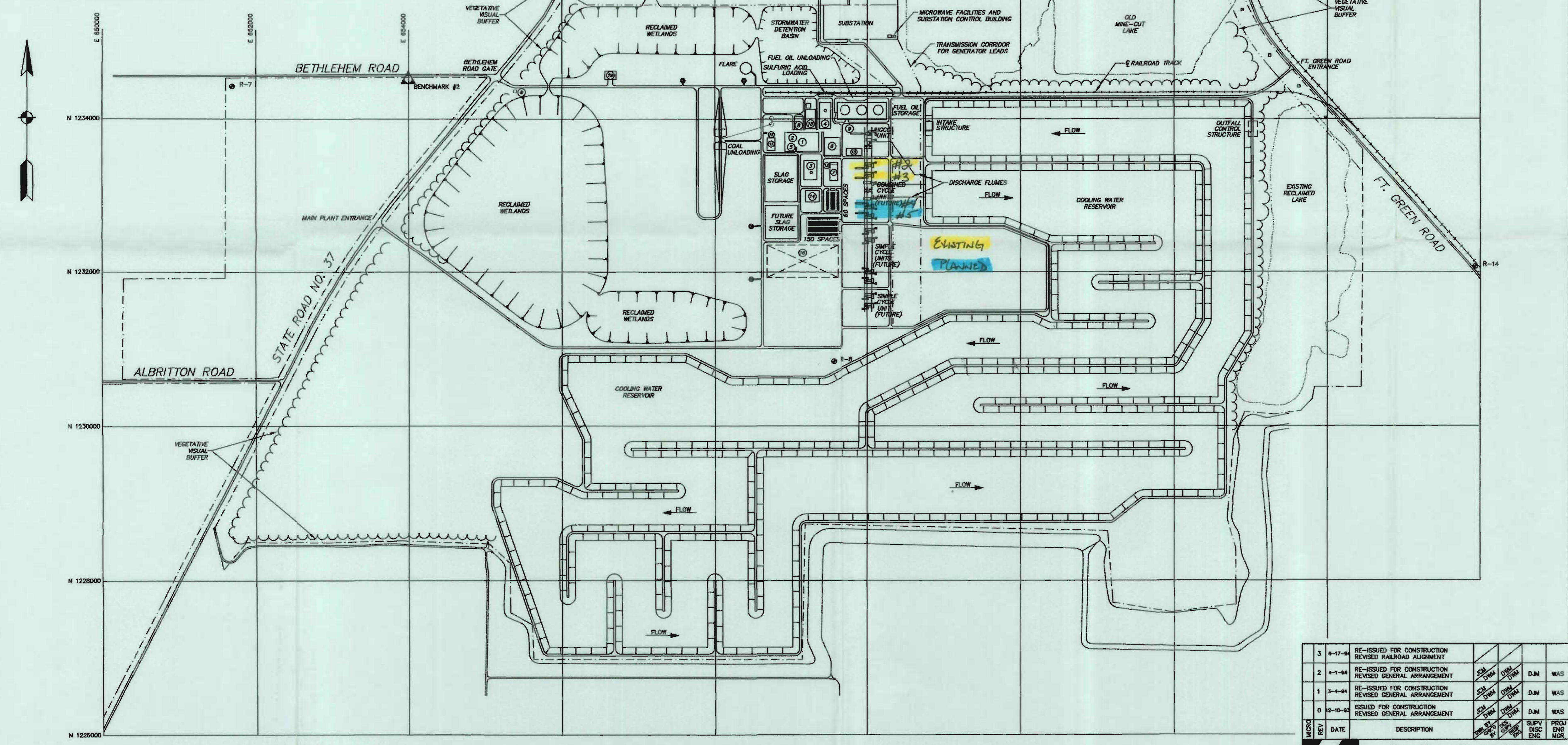
\* POINT LOCATION NOT WITHIN DRAWING LIMITS.

NOTES:

- THE PLANT COORDINATE SYSTEM IS BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83).
- THE PLANT COORDINATE SYSTEM IS TIED TO THE HILLSBOROUGH COUNTY TRIANGULATION PROJECT, FIRST ORDER HORIZONTAL CONTROL STATION "LONE" (COUNTY NO. VHC-32), AS FOLLOWS:

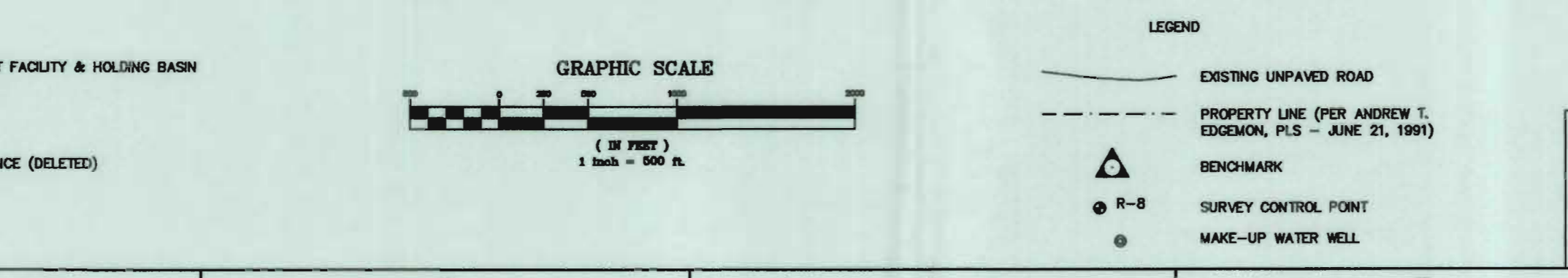
	HILLSBOROUGH CO. (NAD 83)	PLANT COORD. SYS. (NAD 83)
LATITUDE	27° 42' 17.04723"	27° 42' 18.18171"
LONGITUDE	82° 03' 34.33862"	82° 03' 33.55126"
NORTHING(Y)	1,225,312.809	1,225,479.84
EASTING(X)	480,744.085	636,974.17

- ALL SURVEYS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF R.E. & C. SPECIFICATION 6492.002.
- BOUNDARY SURVEY MONUMENT REQUIREMENTS SHALL BE COORDINATED WITH KENNETH THOMPSON, REGISTERED PROFESSIONAL SURVEYOR, ENGINEERING DEPARTMENT OF POLK COUNTY.



BUILDING KEY

1 GASIFICATION & GAS COOLING	11 INDUSTRIAL WASTE TREATMENT FACILITY & HOLDING BASIN
2 ACID GAS REMOVAL	12 SANITARY WASTE TREATMENT
3 AIR SEPARATION UNIT	13 48 V BATTERY, PBK. & RTU
4 SULFURIC ACID PLANT	14 CONSTRUCTION WAREHOUSE
5 HOT GAS CLEANUP	15 MAINTENANCE SHOP
6 MAKE-UP WATER TREATING	16 CONSTRUCTION LAYDOWN
7 CONTROL AND GENERAL SERVICES BUILDING	17 MOBILE EQUIPMENT MAINTENANCE (DELETED)
8 COAL CRUSHER	18 BRINE CONCENTRATION
9 CONSTRUCTION POWER FACILITIES	19 PROPANE UNLOADING
10 ADMINISTRATION BUILDING & VISITOR'S CENTER (DELETED)	



SCALE 1 in = 500 ft

DEC DWG. NO. 6492-SP-002

DEC FILE NAME SP002.DWG

**United Engineers & Constructors**  
A Bechtel Company

TAMPA ELECTRIC  
POLK POWER STATION  
A TECO ENERGY COMPANY

SITE PREPARATION  
GENERAL ARRANGEMENT &  
SURVEY CONTROL DIAGRAM

DWG NO	92127-EY-2B	REV NO	3
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NO	DATE	DESCRIPTION	BY	CHKD	APP'D	PROJ. ENG. MGR.
3	6-17-94	RE-ISSUED FOR CONSTRUCTION REVISED RAILROAD ALIGNMENT				
2	4-1-94	RE-ISSUED FOR CONSTRUCTION REVISED GENERAL ARRANGEMENT				D.M. WAS
1	3-4-94	RE-ISSUED FOR CONSTRUCTION REVISED GENERAL ARRANGEMENT				D.M. WAS
0	12-10-93	ISSUED FOR CONSTRUCTION REVISED GENERAL ARRANGEMENT				D.M. WAS

# **ATTACHMENT 4**

Permit Application Revised Section 7.0



Table 7-1. Air Quality Impact Analysis Summary, Units 4 and 5 — Natural Gas Firing

Revision R1 - 11/30/05

	Case 1 (100% Load, 20°F Ambient)					Case 2 (75% Load, 20°F Ambient)					Case 3 (50% Load, 20°F Ambient)				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Nominal 10 g/s Impacts (Units 4 and 5):															
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	2.06	2.04	1.95	1.99	2.07	2.26	2.25	2.52	2.54	2.43	2.82	2.76	2.94	2.68	2.87
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	0.98	1.19	1.23	1.31	1.25	1.18	1.44	1.49	1.57	1.50	1.36	1.65	1.71	1.80	1.72
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.60	0.82	0.61	0.82	0.64	0.73	0.98	0.74	0.99	0.77	0.84	1.11	0.85	1.13	0.88
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.24	0.24	0.25	0.25	0.26	0.29	0.28	0.30	0.30	0.32	0.33	0.33	0.35	0.34	0.37
Annual ( $\mu\text{g}/\text{m}^3$ )	0.012	0.013	0.013	0.013	0.013	0.015	0.017	0.018	0.016	0.016	0.018	0.021	0.021	0.021	0.020
SO <sub>2</sub>															
Emission Rate (g/s)	1.28	1.28	1.28	1.28	1.28	1.03	1.03	1.03	1.03	1.03	0.82	0.82	0.82	0.82	0.82
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	0.13	0.15	0.16	<b>0.17</b>	0.16	0.12	0.15	0.15	0.16	0.15	0.11	0.14	0.14	0.15	0.14
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.030	0.030	0.032	0.031	<b>0.033</b>	0.030	0.029	0.031	0.030	0.033	0.027	0.027	0.029	0.028	0.030
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0015	0.0016	0.0017	0.0016	0.0016	0.0016	0.0017	<b>0.0018</b>	0.0017	0.0017	0.0015	0.0017	0.0018	0.0017	0.0016
NO <sub>2</sub>															
Emission Rate (g/s)	9.26	9.26	9.26	9.26	9.26	7.35	7.35	7.35	7.35	7.35	5.73	5.73	5.73	5.73	5.73
Tier 2 Annual ( $\mu\text{g}/\text{m}^3$ )	0.0082	0.0088	0.0093	0.0088	0.0088	0.0085	0.0093	<b>0.0097</b>	0.0090	0.0090	0.0079	0.0090	0.0092	0.0089	0.0085
PM <sub>10</sub>															
Emission Rate (g/s)	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.054	0.053	0.056	0.056	0.059	0.065	0.065	0.068	0.067	0.073	0.075	0.074	0.079	0.077	0.083
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0027	0.0029	0.0030	0.0029	0.0029	0.0035	0.0038	0.0040	0.0037	0.0037	0.0042	0.0048	0.0049	0.0047	0.0045
CO															
Emission Rate (g/s)	3.82	3.82	3.82	3.82	3.82	3.01	3.01	3.01	3.01	3.01	2.50	2.50	2.50	2.50	2.50
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	0.79	0.78	0.74	0.76	<b>0.79</b>	0.68	0.68	0.76	0.77	0.73	0.71	0.69	0.74	0.67	0.72
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.23	<b>0.31</b>	0.23	0.31	0.25	0.22	0.29	0.22	0.30	0.23	0.21	0.28	0.21	0.28	0.22

Table 7-1. Air Quality Impact Analysis Summary, Units 4 and 5 — Natural Gas Firing (Page 2 of 3)

Revision R1 - 11/30/05

	Case 4 (100% Load, 59°F Ambient)					Case 5 (75% Load, 59°F Ambient)					Case 6 (50% Load, 59°F Ambient)				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Nominal 10 g/s Impacts (10 SCCTs):															
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	2.07	2.16	1.95	2.16	2.08	2.26	2.33	2.52	2.66	2.44	2.83	2.76	2.94	2.68	2.87
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	1.01	1.22	1.27	1.34	1.29	1.20	1.46	1.51	1.59	1.52	1.37	1.67	1.73	1.82	1.74
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.62	0.85	0.63	0.85	0.66	0.74	0.99	0.75	1.00	0.78	0.85	1.12	0.87	1.15	0.89
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.24	0.24	0.26	0.25	0.27	0.29	0.29	0.31	0.30	0.32	0.33	0.33	0.35	0.34	0.37
Annual ( $\mu\text{g}/\text{m}^3$ )	0.012	0.013	0.014	0.013	0.013	0.016	0.017	0.018	0.017	0.017	0.019	0.021	0.022	0.021	0.020
SO <sub>2</sub>															
Emission Rate (g/s)	1.20	1.20	1.20	1.20	1.20	0.97	0.97	0.97	0.97	0.97	0.78	0.78	0.78	0.78	0.78
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	0.12	0.15	0.15	0.16	0.15	0.12	0.14	0.15	0.15	0.15	0.11	0.13	0.13	0.14	0.14
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.029	0.029	0.031	0.030	0.032	0.028	0.028	0.030	0.029	0.031	0.026	0.026	0.028	0.027	0.029
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0015	0.0016	0.0017	0.0016	0.0016	0.0015	0.0017	0.0017	0.0016	0.0016	0.0015	0.0017	0.0017	0.0016	0.0016
NO <sub>2</sub>															
Emission Rate (g/s)	8.67	8.67	8.67	8.67	8.67	6.91	6.91	6.91	6.91	6.91	5.44	5.44	5.44	5.44	5.44
Tier 2 Annual ( $\mu\text{g}/\text{m}^3$ )	0.0079	0.0087	0.0092	0.0086	0.0085	0.0081	0.0090	0.0093	0.0087	0.0087	0.0077	0.0087	0.0089	0.0086	0.0082
PM <sub>10</sub>															
Emission Rate (g/s)	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.056	0.055	0.058	0.058	0.060	0.066	0.066	0.069	0.068	0.074	0.076	0.075	0.080	0.078	0.084
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0028	0.0031	0.0032	0.0030	0.0030	0.0036	0.0039	0.0041	0.0038	0.0038	0.0043	0.0048	0.0049	0.0048	0.0045
CO															
Emission Rate (g/s)	3.63	3.63	3.63	3.63	3.63	2.90	2.90	2.90	2.90	2.90	2.39	2.39	2.39	2.39	2.39
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	0.75	0.78	0.71	0.78	0.75	0.65	0.68	0.73	0.77	0.71	0.68	0.66	0.70	0.64	0.69
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.23	0.31	0.23	0.31	0.24	0.21	0.29	0.22	0.29	0.23	0.20	0.27	0.21	0.27	0.21

Table 7-1. Air Quality Impact Analysis Summary, Units 4 and 5 — Natural Gas Firing (Page 3 of 3)

Revision R1 - 11/30/05

	Case 7 (100% Load, 90°F Ambient)					Case 8 (80% Load, 90°F Ambient)					Case 9 (50% Load, 90°F Ambient)				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
<b>Nominal 10 g/s Impacts (10 SCCTs):</b>															
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	2.09	2.16	2.21	2.16	2.08	2.59	2.69	2.52	2.66	2.44	2.90	2.80	2.95	2.69	2.94
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	1.05	1.27	1.32	1.40	1.34	1.23	1.50	1.55	1.64	1.56	1.40	1.71	1.77	1.87	1.78
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.65	0.88	0.65	0.88	0.69	0.76	1.02	0.77	1.03	0.80	0.87	1.15	0.89	1.17	0.91
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.26	0.25	0.27	0.26	0.28	0.30	0.30	0.31	0.31	0.33	0.34	0.34	0.36	0.35	0.38
Annual ( $\mu\text{g}/\text{m}^3$ )	0.013	0.014	0.015	0.014	0.014	0.016	0.018	0.019	0.017	0.017	0.020	0.022	0.023	0.022	0.021
<b>SO<sub>2</sub></b>															
Emission Rate (g/s)	1.10	1.10	1.10	1.10	1.10	0.91	0.91	0.91	0.91	0.91	0.73	0.73	0.73	0.73	0.73
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	0.12	0.14	0.15	0.15	0.15	0.11	0.14	0.14	0.15	0.14	0.10	0.12	0.13	0.14	0.13
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.028	0.028	0.029	0.029	0.030	0.027	0.027	0.029	0.028	0.030	0.025	0.025	0.027	0.026	0.028
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0014	0.0016	0.0017	0.0015	0.0015	0.0015	0.0017	0.0017	0.0016	0.0016	0.0014	0.0016	0.0016	0.0016	0.0015
<b>NO<sub>2</sub></b>															
Emission Rate (g/s)	7.94	7.94	7.94	7.94	7.94	6.47	6.47	6.47	6.47	6.47	5.15	5.15	5.15	5.15	5.15
Tier 2 Annual ( $\mu\text{g}/\text{m}^3$ )	0.0077	0.0084	0.0091	0.0083	0.0082	0.0079	0.0088	0.0090	0.0084	0.0084	0.0076	0.0085	0.0087	0.0084	0.0080
<b>PM<sub>10</sub></b>															
Emission Rate (g/s)	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.058	0.057	0.060	0.060	0.063	0.068	0.067	0.071	0.070	0.075	0.078	0.077	0.082	0.080	0.086
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0029	0.0032	0.0035	0.0032	0.0031	0.0037	0.0041	0.0042	0.0039	0.0039	0.0045	0.0050	0.0051	0.0049	0.0047
<b>CO</b>															
Emission Rate (g/s)	3.23	3.23	3.23	3.23	3.23	2.74	2.74	2.74	2.74	2.74	2.30	2.30	2.30	2.30	2.30
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	0.68	0.70	0.71	0.70	0.67	0.71	0.74	0.69	0.73	0.67	0.67	0.65	0.68	0.62	0.68
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.21	0.28	0.21	0.28	0.22	0.21	0.28	0.21	0.28	0.22	0.20	0.26	0.20	0.27	0.21

7-4

Maximum Impacts	Project Impact	Case No.	Year	Class II SIL	% of SIL (%)
<b>SO<sub>2</sub></b>					
High, 3-Hour ( $\mu\text{g}/\text{m}^3$ )	0.17	1	1995	25	0.67
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.033	1	1996	5	0.66
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0016	2	1994	1	0.16
<b>NO<sub>2</sub></b>					
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0097	2	1994	1	0.97
<b>PM<sub>10</sub></b>					
High, 24-Hour ( $\mu\text{g}/\text{m}^3$ )	0.086	9	1996	5	1.72
Annual ( $\mu\text{g}/\text{m}^3$ )	0.0051	9	1994	1	0.51
<b>CO</b>					
High, 1-Hour ( $\mu\text{g}/\text{m}^3$ )	0.79	1	1996	2,000	0.040
High, 8-Hour ( $\mu\text{g}/\text{m}^3$ )	0.31	1	1993	500	0.06

Source: ECT, 2005.

Table 7-3. ISCST3 Model Results—Maximum Criteria Pollutant Impacts

Pollutant	Averaging Time	Maximum Impact ( $\mu\text{g}/\text{m}^3$ )	Significant Impact ( $\mu\text{g}/\text{m}^3$ )
NO <sub>x</sub>	Annual	0.043	1
PM <sub>10</sub>	Annual	0.0094	1
	24-hour	0.16	5
SO <sub>2</sub>	Annual	0.016	1
	24-hour	0.34	5
	3-hour	1.7	25
CO	8-Hour	0.99	500
	1-Hour	2.5	2,000

Source: ECT, 2005.