TAMPA ELECTRIC



June 17, 2008

Mr. Jonathan Holtom, P.E.
Florida Department of Environmental Protection
111 Magnolia Dr., Suite 4
Tallahassee, FL 32301-2956

**Via: Email and FedEx**
**Airbill No. 7900 3572 3701**

**Re: Comments on Technical Evaluation & Preliminary Determination and Construction Permit Regarding Change in Fuel Blend at Polk Power Station**
**File No.: 1050233-021-AC**

Dear Mr. J. Holtom:

The purpose of this letter is to submit comments concerning the Florida Department of Environmental Protection proposed Draft Air Construction Permit 1050233-021-AC.

Comments concerning the "Technical Evaluation & Preliminary Determination":

Page 3 of 8 – **PSD Applicability – Project**

**1st paragraph, Ln 5-6,** current statement: "No changes are proposed for the Unit 1 gasification or combustion turbine other than the use of 85 percent petcoke."

Suggested change: "No changes are proposed for the Unit 1 gasification or combustion turbine other than the use of 85 percent petcoke ***and increase in the solid fuel sulfur content up to 4.7% by weight.***"

Page 6 of 8 – **3. Department Review**

**1st paragraph, Ln 3-5,** current statement: "...when considering the fact that the syngas produced after removing more of the sulfur compounds will likely have a higher heat content than the current syngas."

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Comment: The higher heat content value of the syngas composition will not change as a result of this construction project. Small variances of the heat content value will continue to occur due to the dynamic nature of the process itself. As seen in the heat content value analysis of the syngas, the components with the greatest contribution to the gross heating value of the syngas are hydrogen ($H_2$) and carbon monoxide (CO) (combined greater than 99% of total contribution). The amount of sulfur removed from the syngas prior to its combustion in the CT is not related to the higher heat content value of the syngas. This is especially true due to the fact the sulfur content of the syngas is relatively the same pre- versus post- construction activities. This was demonstrated in the trial burns with sulfur related emissions having a net increase less than the PSD "significant increase" threshold.

Comments concerning the "Draft Air Construction Permit 1050233-021-AC / PSD-FL-194H":

Page 2 of 9 – **FACILITY AND PROJECT DESCRIPTION**

**1st paragraph**, current statement: "Two additional nominal 165 MW simple cycle gas turbines (Units 4 and 5) ~~*have been permitted, but are not yet in operation*~~."

Suggested change: "Two additional nominal 165 MW simple cycle gas turbines (Units 4 and 5) ***have completed construction activities and the application to include these units as part of the Title-V permit is with the Department***."

**2nd paragraph,** current statement: "This permit also recognizes and authorizes the minor upgrades and/or additions of component equipment at the sulfuric acid plant and the methyl diethanol amine (MDEA) acid gas removal ~~*plant*~~ that are outlined in the technical evaluation..."

Suggested change: "This permit also recognizes and authorizes the minor upgrades and/or additions of component equipment at the sulfuric acid plant and the methyl diethanol amine (MDEA) acid gas removal ***system*** that are outlined in the technical evaluation,"

Page 4 of 9 – **EQUIPMENT**

**Subpart 2,a.**, current statement: "The sulfuric acid plant compressor will be modified by performing one of the following options:"

Suggested statement: "The sulfuric acid plant compressor will be modified by performing one ***or more*** of the following options:"

**Subpart 2,a., 5th bullet,** current statement:

- "~~*Installing an oxygen injection quill in the decomposition furnace air inlet duct.*~~"

Comment: This option is included in the decomposition furnace and is not applicable to the sulfuric acid plant compressor.

**Subpart 2.b.**, current statement: "The decomposition furnace air intake system will be modified to decrease the pressure drop by performing one of the following options:"

Suggested statement: "The decomposition furnace air intake system will be modified to decrease the pressure drop by performing one ***or more*** of the following options:"

**Subpart 2.b., 4th bullet**, current statement: "Installing an oxygen injection quill air inlet duct."

Suggested statement: "Installing an oxygen injection quill ***in the decomposition furnace*** air inlet duct."

**Subpart 2.c.,** current statement: "The $O_2$ supply line and/or control valve leading to the decomposition furnace will be modified by performing one of the following options:"

Suggested statement: "The $O_2$ supply line and/or control valve leading to the decomposition furnace will be modified by performing one ***or more*** of the following options:"

Page 5 of 9 – **EMISSIONS AND PERFORMANCE REQUIREMENTS**

**Condition 5.,** current statement: "Compliance with this limit shall be demonstrated through the use of a continuous flow monitor located between the sulfuric acid plant and the sulfuric acid storage tank."

Suggested statement: "Compliance with this limit shall be demonstrated through the use of a continuous flow ***and composition (purity)*** monitor located between the sulfuric acid plant and the sulfuric acid storage tank."

**Condition 6.,** current statement: Within 60 days after achieving the maximum production rate at which the units will be operated, but not later than 180 days after completing the upgrades to the sulfuric acid plant and the MDEA acid gas removal system, the testing listed below shall be performed."

Comment: PPS anticipates incorporating a number of the upgrades to the sulfuric acid plant and the MDEA acid gas removal system as immediate as possible. Once these up grades have been completed, PPS will incrementally increase the petcoke content, first to ~70% and stabilize the process for a period of approximately 4-6 weeks. After which, another step up in petcoke content to ~78% is anticipated. Once the engineering controls are stabilized, the system will be evaluated. If at that time it is deemed additional controls or up grades (e.g. compressor motor size increase) are needed, these changes can not be made until a major outage which would not occur until the spring or summer of 2009. If this is the case, PPS will request an extension of the permit expiration date in order to accommodate the new schedule. Additionally, PPS will conduct a compliance test(s) at the maximum petcoke content achievable and submit the test results to the appropriate compliance authorities. Once all up grades are complete and a "new" maximum production rate achieved, a final compliance test(s) will be conducted and submitted

to the department. This alternative scenario will result in the compliance demonstration(s) to be submitted in parts.

**Condition 7., subpart a.1.,** current statement: "The permittee shall conduct stack tests annually on combustion turbine Unit 1 (EU-001) to demonstrate continued compliance with the permitted emissions limits for carbon monoxide (CO), ~~Volatile Organic Compounds (VOC)~~, and visible emissions."

Comment: An initial compliance stack test for VOC will be conducted. The current Title-V permit requires stack testing for VOC on Unit 1 at a frequency of "upon permit renewal". It is the opinion of PPS there should not be an annual stack testing requirement for VOC during the monitoring period and stack testing requirements should follow current Title-V permit requirements.

Page 8 of 9 – **RECORDS AND REPORTS**

**Subpart b.3,** current statement: "The owner or operator may use CEMS data in combination with an appropriate f-factor, heat input data, and any other ~~63~~ necessary parameters..."

Comment: PPS believes the number "63" is a typo and should be removed.

TEC appreciates your cooperation in this matter and if you have any questions, please call me at (813) 228-4433.

Sincerely,

Joshua D. Ellwein, P.E.
Principal Engineer - Air Programs
Environmental, Health & Safety

EHS/rlk/JDE127