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COMMISSION
CLERK

May 5, 2010

HAND DELIVERED

Ms. Ann Cole, Director
Division of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Tampa Electric Company's Petition for Approval of Revisions to the Standard Offer Contract and Rate Schedules COG-1 and COG-2; FPSC Docket No. 100167-EI

Dear Ms. Cole:

Enclosed for filing in the above docket are the original and five copies of Tampa Electric Company's answers to the Florida Public Service Commission Staff's Data Request No. 1.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,



James D. Beasley

JDB/pp
Enclosures

COM _____

APA _____

ECR _____

GCL _____

RAD _____

SSC _____

ADM _____

OPC _____

CLK _____

cc: Martha Carter Brown (w/enc.)
Lee Eng Tan (w/enc.)
Shevie Brown (w/enc.)

DOCUMENT NUMBER-DATE

03749 MAY-5 2010

FPSC-COMMISSION CLERK

TAMPA ELECTRIC COMPANY
DOCKET NO. 100167-EI
STAFF'S DATA REQUEST
REQUEST NO. 1
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1. Please refer to the Legislative format section titled First Revised Sheet No. 8.416.
 - a. Please identify and explain all changes to the section titled Annual Scheduled Maintenance.
 - b. Please explain the rationale behind the proposed change to the maximum period of two weeks major maintenance every eighth year from the previous period of two weeks each year for annual maintenance and a total of five weeks every fifth year for major overhauls.
 - c. Please explain why the company believes that major maintenance overhauls can be performed within two weeks every eighth year?
 - d. Please identify and describe the types of functions that are conducted during maintenance overhauls.

- A. Please refer to the attached replacement for First Revised Sheet No. 8.416 (Legislative format) filed concurrently with this response, which reflects the company's current maintenance assumptions for the aero-derivative combustion turbine (aero CT) based on projected unit operating hours and manufacturer guidelines:
 - a. The proposed changes and explanations to the section titled Annual Scheduled Maintenance are:

Proposed Change: Replace the two-week (336 hours) annual maintenance period with a four-day (96 hours) annual maintenance period.

Explanation: The aero CT will be removed from service for four days every year for a bore scope inspection. No other annual maintenance is planned.

Proposed Change: Replace the maximum time period of five weeks (840 hours) every five years for major overhauls with a maximum time period of twelve weeks (2,016 hours) every fifteen years for maintenance.

Explanation: This maintenance schedule of 12 weeks every 15 years is based on manufacturer's guidelines that major maintenance be performed at 25,000 operating hours. Based on the company's projected hours of operation, it is estimated that the aero CT would achieve 25,000 hours in year 15 of operation. The total outage time for major maintenance is

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approximately 12 weeks. (See the response to "b" below for a more detailed explanation.)

- b. The maintenance schedule reflected in the currently approved Standard Offer Contract is based on a GE 7F combustion turbine; the company has determined that this is not an appropriate schedule for maintenance of the aero CT. Deployment of the aero CT in the electric utility industry is relatively new; therefore, there exists little experience or empirical data regarding maintenance of aero CTs under varying industry conditions. First Revised Sheet No. 8.416 reflects the company's current expectations for maintenance schedule developed for its existing aero CTs.
- c. As described in the response to "a" above, the time required to perform major maintenance on the aero CT is expected to be approximately 12 weeks (2,016 hours) every 15 years.
- d. Maintenance overhauls may apply to the complete gas generator, to gas generator major assemblies, or to the power turbine depending on fuel, operating (i) hours, (ii) load levels and (iii) facility environmental conditions. Gas turbine maintenance overhauls are intended to address the restoration of gas generator/power turbine and all subassemblies to manufacturer standards / specifications in an effort to allow the gas turbine to operate for long periods of time. Complete disassembly may be required to permit access to all parts for inspection, correction, and refurbishment. Typical inspection and refurbishment activities include: (i) external inspection of gas turbine inlet and exterior, (ii) inspection and replacement (as needed) of all gas generator and ancillary external tubing, hoses and electrical leads and wires, (iii) inspection of gas generator cases, (iv) inspection and repair / replacement (as needed) of gas generator main gearbox; main oil strainer; fuel pump; flow divider valve; hydraulic pump; starter; ignition system; bleed valves and solenoids; variable stator vane actuators; pressure probes and exhaust gas temperature probes, (v) inspection and repair/replacement (as needed) of multiple compressor vanes and blades; combustion chambers and multiple turbine vanes and blades, and (vi) combustor / high pressure turbine / low pressure turbine modular inspection and refurbishment of hot section coatings as required.



~~ORIGINAL~~FIRST REVISED SHEET NO. 8.416
CANCELS ORIGINAL SHEET NO. 8.416

4. **Annual Scheduled Maintenance:** Each year the CEP shall prepare, coordinate, and provide by April 1st all planned maintenance with the Company. The Company will review and approve annual/major scheduled maintenance by July 1st for the balance of the current year and following calendar year. A maximum of ~~2 weeks~~4 days (~~336~~72 hours) each year for annual maintenance and a total of ~~5-12~~ weeks (~~840~~2,016 hours) every ~~fifth~~fifteenth year for major ~~overhauls~~maintenance will be allowed. Scheduled maintenance shall not be planned during December through February without prior written consent from the Company. At the option of the CEP and by written notification to the Company, scheduled outage time may be utilized during any other months to improve the CEP's Availability and Capacity Factors and such scheduled outage hours will be *disregarded* from the Monthly Availability Factor and Capacity Factor calculations. However, once allowable maintenance hours have been utilized, all other hours during the year will be considered in Availability and Capacity Factor calculations.

5. **Monthly Capacity Payment:** Starting with the CEP's Commercial In-Service Date, for months when the CEP unit has been dispatched (*provided that CEP has achieved at least a 90% Monthly Availability Factor*), the Monthly Capacity Payment for each Monthly Period shall be calculated according to the following:

a. In the event that the Monthly Capacity Factor is less than 80%, no Monthly Capacity Payment shall be paid to the CEP. That is:

$$\text{MCP} = \$0$$

b. In the event that the Monthly Capacity Factor is greater than or equal to 80% but less than 90%, the Monthly Capacity Payment shall be calculated from the following formula:

$$\text{MCP} = [(BCC) \times (.02 \times (CF - 45))] \times CC$$

ISSUED BY: ~~C. R. Black~~G. L. Gillette,
President

DATE EFFECTIVE: May 22, 2007

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2. Please refer to the Avoided Unit 2013 CT. Please provide the estimated as-available energy costs for the avoided unit, using the table below.

Tampa Electric Standard Offer Contract Unit Information Plant Type 2013 CT	
Total Installed Cost (\$KW)	
Direct Construction Cost (\$/KW)	
AFUDC Amount (\$/KW)	
Fixed O & M (\$/KW-YR)	
Variable O & M (\$/KWH)	
K Factor	

- A. Please see the table below for estimated capital and O&M costs of the 2013 avoided unit.

Tampa Electric Standard Offer Contract Unit Information Plant Type 2013 CT	
Total Installed Cost (\$KW)	\$727.54 (2013 \$)
Direct Construction Cost (\$/KW)	\$674.28 (2013 \$)
AFUDC Amount (\$/KW)	\$53.26 (2013 \$)
Fixed O & M (\$/KW-YR)	\$21.66 (2013 \$)
Variable O & M (\$/KWH)	\$0.00403 (2013 \$)
K Factor	1.5975

The estimated Avoided Energy Costs (fuel and variable O&M) are as follows:
 Avoided Unit Energy \$/MWh in 2013 = \$96.57/MWh.
 As-Available Energy \$/MWh in 2013 = \$62.64/MWh.

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3. Please provide the minimum (on and off peak availability factor) performance standards of the 2013 avoided unit.

A. The Minimum Performance Standards for the 2013 avoided unit are as follows:

Monthly Availability Factor of 90% or greater – not to exceed 100%.

The Monthly Availability Factor is calculated by averaging the Hourly Availability Factors for all hours in the Monthly Period. The Hourly Availability Factor is defined as the hourly Committed Capacity (not to exceed Contracted Capacity) expressed as a percentage of Contracted Capacity. Scheduled Maintenance hours are excluded from the calculation.

Monthly Capacity Factor of 80% or greater – not to exceed 100%.

The Monthly Capacity Factor is calculated as in the summer months (April through October) as the sum of 80% of the Monthly Average On-peak Operating Factor and 20% of the Monthly Average Off-peak Operating Factor. In the winter months (November through March), the Monthly Capacity Factor is calculated as the sum of 90% of the Monthly Average On-peak Operating Factor and 10% of the Monthly Average Off-peak Operating Factor. The Operating Factors are calculated by dividing actual megawatts received in each hour that the unit was dispatched by the lesser of the Committed Capacity or the capacity requested in the hour. Note: The calculations for the on-peak and off-peak operating factors only include those hours in which the avoided unit would have been dispatched by the company; therefore, the same calculation may be used for all avoided unit technologies without disadvantaging peaking or intermediate units.