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September 9, 2002

HAND DELIVERED

Ms. Blanca S. Bayo, Director  
Division of Commission Clerk  
and Administrative Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

Re: Environmental Cost Recovery Clause  
FPSC Docket No. 020007-EI

Dear Ms. Bayo:

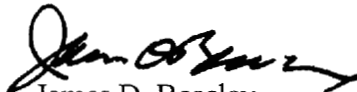
Enclosed for filing in the above docket, on behalf of Tampa Electric Company, are the original and ten (10) copies of each of the following:

1. Petition of Tampa Electric Company.
2. Prepared Direct Testimony and Exhibit of Howard T. Bryant.
3. Prepared Direct Testimony of Greg M. Nelson.

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

AUS \_\_\_\_\_  
CAF \_\_\_\_\_  
CMP \_\_\_\_\_  
COM 5 \_\_\_\_\_  
CTR 1 \_\_\_\_\_  
ECR \_\_\_\_\_  
GCL \_\_\_\_\_  
OPC \_\_\_\_\_  
MMS \_\_\_\_\_  
SEC 1 \_\_\_\_\_  
OTH \_\_\_\_\_

JDB/pp  
Enclosures  
*orig. of testimony*

cc: All Parties of Record (w/encls.)

*Ty - Nelson* DOCUMENT NUMBER-DATE  
09525-02

*Ty - Bryant* DOCUMENT NUMBER-DATE  
09524 SEP-9 8

*Petition* DOCUMENT NUMBER-DATE  
09523 SEP-9 8

FPSC-COMMISSION CLERK

FPSC-COMMISSION CLERK



BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 020007-EI

IN RE:

ENVIRONMENTAL COST RECOVERY FACTORS

PROJECTIONS

JANUARY 2003 THROUGH DECEMBER 2003

TESTIMONY

OF

GREG M. NELSON

DOCUMENT NUMBER-DATE

19525 SEP-98

FPSC-COMMISSION CLERK

1                   BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2                                 PREPARED DIRECT TESTIMONY

3   OF

4   GREGORY M. NELSON

5  
6    **Q.**    Please state your name, address, occupation and employer.

7  
8    **A.**    My name is Gregory M. Nelson. My mailing address is P.O.  
9            Box 111, Tampa, Florida 33601, and my business address is  
10           6944 U.S. Highway 41 North, Apollo Beach, Florida 33572.  
11           I am employed by Tampa Electric Company ("Tampa Electric"  
12           or "the company") as Director, Environmental Affairs in  
13           the Energy Supply Trading and Services.

14  
15   **Q.**    Please provide a brief outline of your educational  
16           background and business experience.

17  
18   **A.**    I received a Bachelors Degree in Mechanical Engineering  
19           from the Georgia Institute of Technology in 1982 and a  
20           Masters of Business Administration from the University of  
21           South Florida in 1987. I am a registered Professional  
22           Engineer in the State of Florida. I began my engineering  
23           career in 1982 in Tampa Electric's Engineering  
24           Development Program. In 1983, I worked in the Production  
25           Department where I was responsible for power plant

1 performance projects. Since 1986, I have held various  
2 environmental permitting and compliance positions. In  
3 1997, I was promoted to Administrator - Air Programs in  
4 the Environmental Planning Department. In this position,  
5 I was responsible for all air permitting and compliance  
6 programs. In 1998, I was promoted to Manager,  
7 Environmental Planning and in 2000 I became Director,  
8 Environmental Affairs. My present responsibilities  
9 include the management of Tampa Electric's environmental  
10 permitting and compliance programs.

11  
12 Q. Have you previously testified before the Florida Public  
13 Service Commission ("Commission")?

14  
15 A. Yes, I have provided testimony regarding environmental  
16 projects and their associated environmental requirements  
17 in Environmental Cost Recovery Clause ("ECRC")  
18 proceedings before this Commission.

19  
20 Q. What is the purpose of your testimony in this proceeding?

21  
22 A. The purpose of my testimony is to demonstrate that the  
23 activities for which Tampa Electric seeks cost recovery  
24 through the ECRC for the 2003 projection period are  
25 activities necessary for the company to comply with

1 environmental requirements. Specifically, I will  
2 describe the ongoing activities that are associated with  
3 the Consent Final Judgment ("CFJ") entered into with the  
4 Florida Department of Environmental Protection ("FDEP")  
5 and the Consent Decree ("CD") lodged with the U.S.  
6 Environmental Protection Agency ("EPA") and the  
7 Department of Justice. I will also discuss other  
8 programs previously approved by the Commission for  
9 recovery through the ECRC as well as the Polk Nitrogen  
10 Oxides ("NO<sub>x</sub>") Emissions Reduction program that the  
11 company is currently seeking approval for recovery in  
12 Docket No. 020726-EI.

13  
14 **Q.** Please provide an overview of the ongoing environmental  
15 compliance requirements that are the result of the CFJ and  
16 CD ("the Orders").

17  
18 **A.** The general requirements of the Orders include repowering  
19 Gannon Station and further reductions of sulfur dioxide  
20 ("SO<sub>2</sub>"), NO<sub>x</sub> and particulate matter ("PM") emissions at  
21 Big Bend Station. The repowering of Gannon Station is  
22 well underway and the work necessary to reduce SO<sub>2</sub>  
23 emissions was largely completed by early 2002.

24  
25 The NO<sub>x</sub> reduction activity is ongoing. The Orders require

1 Tampa Electric to perform NO<sub>x</sub> reduction projects on Big  
2 Bend Units 1 through 3, however, Big Bend Unit 4 may be  
3 substituted for Big Bend Unit 3. These early NO<sub>x</sub>  
4 reductions use 1998 NO<sub>x</sub> emissions as the baseline year for  
5 determining the level of reduction achieved. Tampa  
6 Electric must also demonstrate innovative NO<sub>x</sub> technologies  
7 beyond these required by the early reduction activities.  
8

9 Concerning the PM emissions reduction, the Orders require  
10 Tampa Electric to develop and implement a best  
11 operational practices (BOP) study to minimize PM  
12 emissions from each electrostatic precipitator, complete  
13 and implement a Best Available Control Technology  
14 ("BACT") analysis of the ESPs at Big Bend Station,  
15 demonstrate the operation of a PM Continuous Emissions  
16 Monitoring System ("CEM") and evaluate the possibility of  
17 installing a second PM CEM.  
18

19 **Q.** Please describe the Big Bend NO<sub>x</sub> Emissions Reduction  
20 program activities and provide the estimated O&M and  
21 capital expenditures for 2003.  
22

23 **A.** The Big Bend NO<sub>x</sub> Emissions Reduction program was approved  
24 by the Commission in Docket No. 001186-EI, Order No. PSC-  
25 00-2104-PAA-EI, issued November 6, 2000. In the order,

1 the Commission found that the program met the requirements  
2 for recovery through the ECRC. For 2003, Tampa Electric  
3 has identified the projects that will reduce NO<sub>x</sub> emissions  
4 as required under the Orders. These include performing  
5 the requisite maintenance on the NO<sub>x</sub> reduction projects  
6 installed in prior years pursuant to the Orders,  
7 continuing the DOE neural network sootblowing project on  
8 Big Bend Unit 2, installing a coal/air monitoring system  
9 on Big Bend Unit 2 and finalizing the coal/air monitoring  
10 system on Big Bend Unit 1, installing water cannons on Big  
11 Bend Unit 3 and performing other work to support the  
12 innovative NO<sub>x</sub> reduction requirements of the Orders.  
13 These projects are expected to result in approximately  
14 \$250,000 of O&M expenses and \$2,583,000 of capital  
15 expenditures.

16  
17 **Q.** Please describe the Big Bend PM Minimization and  
18 Monitoring program activities and provide the estimated  
19 O&M and capital expenditures for 2003.

20  
21 **A.** The Big Bend PM Minimization and Monitoring program was  
22 approved by the Commission in Docket No. 001186-EI, Order  
23 No. PSC-00-2104-PAA-EI, issued November 6, 2000. In the  
24 order, the Commission found that the program met the  
25 requirements for recovery through the ECRC. For 2003,

1 Tampa Electric has identified various projects that will  
2 improve precipitator performance and reduce PM emissions  
3 as required under the Orders. These projects include the  
4 implementation of the BOP and BACT studies and activities  
5 associated with the installation and demonstration of a PM  
6 CEM system, the installation of flyash hopper level  
7 detectors and flyash controls on Big Bend Unit 1, flow  
8 corrections on Big Bend Unit 3 and the relocation of slag  
9 tank vent lines on Big Bend Units 1 and 3. These projects  
10 are expected to result in approximately \$850,000 of O&M  
11 expenses and \$750,000 of capital expenditures.  
12

13 Q. Please identify the other Commission approved programs you  
14 will discuss.  
15

16 A. The programs previously approved by the Commission that I  
17 will discuss include Big Bend Unit 3 Flue Gas  
18 Desulfurization Integration, Big Bend Units 1 and 2 Flue  
19 Gas Desulfurization and Gannon Thermal Discharge Study.  
20

21 Q. Please describe the Big Bend Unit 3 Flue Gas  
22 Desulfurization Integration and Big Bend Units 1 and 2  
23 Flue Gas Desulfurization activities and provide the  
24 estimated O&M and capital expenditures for 2003.  
25



1    **A.**    The Big Bend Unit 3 Flue Gas Desulfurization Integration  
2            program was approved by the Commission in Docket No.  
3            960688-EI, Order No. PSC-96-1048-FOF-EI, issued August 14,  
4            1996. The Big Bend Units 1 and 2 Flue Gas Desulfurization  
5            program was approved by the Commission in Docket No.  
6            980693-EI, Order No. PSC-99-0075-FOF-EI, issued January  
7            11, 1999. In those orders, the Commission found that the  
8            programs met the requirements for recovery through the  
9            ECRC. These programs were implemented to meet the SO<sub>2</sub>  
10           emissions requirements of the Phase I and II Clean Air Act  
11           Amendments of 1990.

12  
13           For 2003, there will be no capital expenditures for these  
14           programs, however, Tampa Electric anticipates O&M expenses  
15           for the Big Bend Unit 3 Flue Gas Desulfurization  
16           Integration program and the Big Bend Units 1 and 2 Flue  
17           Gas Desulfurization program will be \$2,524,200 and  
18           \$4,448,600, respectively. The dominant component of these  
19           expenses is projected to be the reagents utilized in the  
20           flue gas desulfurization process with the balance of  
21           expenses targeted for maintenance.

22  
23    **Q.**    Please describe the Gannon Thermal Discharge Study program  
24            activities and provide the estimated O&M and capital  
25            expenditures for 2003.

1     **A.**    The Gannon Thermal Discharge Study program was approved by  
2            the Commission in Docket No. 010593-EI, Order No. PSC-01-  
3            1847-PAA-EI, issued September 14, 201. In that order, the  
4            Commission found that the program met the requirements for  
5            recovery through the ECRC.     The FDEP is currently  
6            reviewing the plan of study submitted by Tampa Electric.  
7            Approval is expected in late 2002 with commencement of the  
8            plan immediately thereafter.   For 2003, there will be no  
9            capital expenditures for this program, however, Tampa  
10           Electric anticipates O&M expenses will be approximately  
11           \$217,000.

12  
13    **Q.**    The Polk NO<sub>x</sub> Emissions Reduction program is pending  
14            Commission approval for ECRC recovery in Docket No.  
15            020726-EI.     Please provide an overview of the  
16            environmental compliance requirements associated with the  
17            program.

18  
19    **A.**    In the initial air construction permit application for  
20            Polk Unit 1, a BACT analysis for NO<sub>x</sub> emissions was  
21            included. However, due to the lack of commercial  
22            operation, the air construction and Title V permits also  
23            included the requirement of a 12 to 18 month demonstration  
24            period after which Tampa Electric was required to submit a  
25            new NO<sub>x</sub> BACT analysis to the FDEP for approval.   This

1 resulted in a new NO<sub>x</sub> BACT emissions limit of 15 parts per  
2 million by volume dry basis ("ppmvd") at 15 percent oxygen  
3 ("O<sub>2</sub>") which was approved by the FDEP. On February 5,  
4 2002 the FDEP issued a final permit under the provisions  
5 of Chapter 403, Florida Statutes, and applicable rules of  
6 the Florida Administrative Code which constituted  
7 authorization for the company's Polk Power Station to  
8 operate Polk Unit 1 with the aforementioned requirements.  
9 The compliance deadline for the new emission limit was set  
10 for July 1, 2003.

11  
12 In order to ensure compliance with the newly established  
13 NO<sub>x</sub> emissions requirement of 15 ppmvd at 15 percent O<sub>2</sub>,  
14 Tampa Electric will undertake the Polk NO<sub>x</sub> Emissions  
15 Reduction program in the following three phases:

- 16  
17 (a) the humidification of the syngas through the  
18 installation of a syngas saturator;  
19  
20 (b) an increased airflow to the air separation unit  
21 by adding guide vanes to the main air  
22 compressor and upgrading the companders (which  
23 supply refrigeration to the plant) and the  
24 associated piping; and  
25

1 (c) The modification of the controls and the  
2 installation of additional guide vanes to the  
3 diluent nitrogen compressor which will provide  
4 more diluent gaseous nitrogen to the turbine.  
5

6 **Q.** What are the estimated capital and O&M expenditures for  
7 2003 related to the Polk NO<sub>x</sub> Emissions Reduction program?  
8

9 **A.** Subsequent to filing the petition seeking approval for  
10 ECRC recovery, work on the program was initiated in order  
11 to meet the July 1, 2003 deadline for the new NO<sub>x</sub>  
12 emissions requirement. Should the Commission approve the  
13 Polk NO<sub>x</sub> Emissions Reduction program for ECRC recovery at  
14 the Agenda Conference scheduled on October 1, 2002, the  
15 expenditures incurred during 2002 will be included in the  
16 company's 2002 True-up Filing. This is consistent with  
17 the request in the program petition. For 2003, the Tampa  
18 Electric anticipates \$62,500 of O&M expenses and \$673,000  
19 of capital expenditures necessary to ensure compliance  
20 with the new NO<sub>x</sub> limitation.  
21

22 **Q.** Please summarize your testimony.  
23

24 **A.** Tampa Electric has entered into settlement agreements with  
25 FDEP and EPA which require significant reductions in

1 emissions from Tampa Electric's Big Bend and Gannon  
2 Stations. The Orders establish definite requirements and  
3 time frames in which air quality improvements must be made  
4 and result in reasonable and fair outcomes for Tampa  
5 Electric, its community and customers, and the  
6 environmental agencies. My testimony identifies projects  
7 which are legally required by the Orders and describes the  
8 progress Tampa Electric plans to achieve during 2003 in  
9 order to meet the more stringent environmental standards.  
10 My testimony also identifies other projects which are  
11 required for Tampa Electric to meet environmental  
12 requirements and provides their 2003 activities and  
13 projected expenditures.

14  
15 Q. Does this conclude your testimony?

16  
17 A. Yes it does.  
18  
19  
20  
21  
22  
23  
24  
25