



BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 050007-EI

IN RE:

ENVIRONMENTAL COST RECOVERY FACTORS

PROJECTIONS

JANUARY 2006 THROUGH DECEMBER 2006

TESTIMONY

OF

GREG M. NELSON

DOCUMENT NUMBER DATE

08513 SEP-8 8

FPC-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 business address is 702
9 North Franklin Street, Tampa, Florida 33602. I am
10 employed by Tampa Electric Company ("Tampa Electric" or
11 "company") as Director, Environmental, Health and Safety
12 in the Generation Services.

13
14 **Q.** Please provide a brief outline of your educational
15 background and business experience.

16
17 **A.** I received a Bachelors Degree in Mechanical Engineering
18 from the Georgia Institute of Technology in 1982 and a
19 Masters of Business Administration from the University of
20 South Florida in 1987. I am a registered Professional
21 Engineer in the State of Florida. I began my engineering
22 career in 1982 in Tampa Electric's Engineering
23 Development Program. In 1983, I worked in the Production
24 Department where I was responsible for power plant
25 performance projects. Since 1986, I have held various

1 environmental permitting and compliance positions. In
2 1997, I was promoted to Administrator - Air Programs in
3 the Environmental Planning Department. In this position,
4 I was responsible for all air permitting and compliance
5 programs. In 1998, I was promoted to Manager,
6 Environmental Planning and in 2000 I became Director,
7 Environmental Affairs. In 2003, I became Director,
8 Environmental, Health and Safety and my present
9 responsibilities include the management of Tampa
10 Electric's environmental permitting and compliance
11 programs as well as generation safety programs.

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

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

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

22
23 **A.** The purpose of my testimony is to demonstrate that the
24 activities for which Tampa Electric seeks cost recovery
25 through the ECRC for the 2006 projection period are

1 activities necessary for the company to comply with
2 environmental requirements. Specifically, I will
3 describe the ongoing activities that are associated with
4 the Consent Final Judgment ("CFJ") entered into with the
5 Florida Department of Environmental Protection ("FDEP")
6 and the Consent Decree ("CD") lodged with the U.S.
7 Environmental Protection Agency ("EPA") and the
8 Department of Justice. I will also discuss other
9 programs previously approved by the Commission for
10 recovery through the ECRC. Finally, I will discuss the
11 sulfur dioxide ("SO₂") emission allowance sales for 2005
12 and how the company is positioned for future allowance
13 needs.

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

18
19 **A.** The general requirements of the Orders include repowering
20 Gannon Station and providing further reductions for SO₂,
21 particulate matter ("PM") and nitrous oxides ("NO_x")
22 emissions at Big Bend Station. The repowering of Gannon
23 Station from coal to natural gas was completed in early
24 2004 and the plant has been renamed the H. L. Culbreath
25 Bayside Power Station.

1 Regarding SO₂ emissions reductions at Big Bend Station,
2 the Orders require Tampa Electric to create a plan for
3 optimizing the availability and removal efficiency of the
4 flue gas desulfurization systems ("FGD" or "scrubbers").
5 The plan was submitted to EPA in two phases, and both
6 were approved.

7
8 Phase I of the plan required that Tampa Electric work
9 scrubber outages around the clock and with contract
10 labor, when necessary, speed the return of a
11 malfunctioning scrubber to service. In addition, Phase I
12 required Tampa Electric to review all critical scrubber
13 spare parts and increase the number and availability of
14 spare parts to ensure a speedy return to service of a
15 malfunctioning scrubber.

16
17 Phase II of the plan outlined capital projects that Tampa
18 Electric was to perform to upgrade each scrubber at Big
19 Bend Station. It also addressed the use of environmental
20 dispatching in the event of a scrubber outage. All of
21 the preliminary SO₂ emissions reduction projects have been
22 completed. However, there will be additional work
23 required to comply with the elimination of the allowed
24 scrubber outage days for 2009 and 2012.

25

1 Q. What do the Orders require for PM emission reductions?

2

3 A. Concerning PM emission reductions, the Orders require
4 Tampa Electric to develop and implement a best
5 operational practices ("BOP") study to minimize PM
6 emissions from each electrostatic precipitator ("ESP"),
7 complete and implement a Best Available Control
8 Technology ("BACT") analysis of the ESPs at Big Bend
9 Station, demonstrate the operation of a PM Continuous
10 Emissions Monitoring System ("CEM") and evaluate the
11 possibility of installing a second PM CEM. Nearly all of
12 the PM emission reduction projects have been completed
13 and there are no projects scheduled for 2006. However,
14 there will be some required BOP projects in the future
15 which are expected to primarily consist of limited wide
16 plate spacing upgrades for Big Bend Units 1 and 3.

17

18 Q. What do the Orders require for NO_x reductions?

19

20 A. The Orders require Tampa Electric to perform NO_x reduction
21 projects on Big Bend Units 1 through 3 and allowed,
22 pursuant to an amendment, for Big Bend Unit 4 to be
23 substituted for Big Bend Unit 3. These early NO_x
24 reductions use 1998 NO_x emissions as the baseline year for
25 determining the level of reduction achieved. Tampa

1 Electric was also required by the Orders to demonstrate
2 innovative or provide additional NO_x technologies beyond
3 those required by the early reduction activities. All of
4 the early NO_x reduction activities have been completed.
5 There are no new projects scheduled for 2006.
6

7 **Q.** Please describe the existing Big Bend Early NO_x Emissions
8 Reduction program activities and provide the estimated O&M
9 expenses for 2006.
10

11 **A.** The Big Bend NO_x Emissions Reduction program was approved
12 by the Commission in Docket No. 001186-EI, Order No. PSC-
13 00-2104-PAA-EI, issued November 6, 2000. In the Order,
14 the Commission found that the program met the requirements
15 for recovery through the ECRC. For 2006, Tampa Electric
16 will perform the requisite maintenance on the previously
17 approved NO_x reduction projects. This maintenance
18 activity is expected to result in approximately \$700,000
19 of O&M expenses..
20

21 **Q.** Please describe the Big Bend PM Minimization and
22 Monitoring program activities and provide the estimated
23 O&M and capital expenditures for 2006.
24

25 **A.** The Big Bend PM Minimization and Monitoring program was

1 approved by the Commission in Docket No. 001186-EI, Order
2 No. PSC-00-2104-PAA-EI, issued November 6, 2000. In the
3 Order, the Commission found that the program met the
4 requirements for recovery through the ECRC. Tampa
5 Electric had previously identified various projects to
6 improve precipitator performance and reduce PM emissions
7 as required by the Orders. No new capital improvement
8 projects are planned for 2006. However, there will be O&M
9 expenses associated with existing and newly installed BOP
10 and BACT equipment and continued implementation of the BOP
11 procedures. These projects are expected to result in
12 approximately \$800,000 of O&M expenses.

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

16
17 A. The programs previously approved by the Commission that I
18 will describe include Big Bend Unit 3 Flue Gas
19 Desulfurization Integration, Big Bend Units 1 and 2 Flue
20 Gas Desulfurization, Gannon Thermal Discharge Study,
21 Bayside SCR Consumables, Big Bend Unit 4 Separated Over-
22 fired Air ("SOFA") and the Clean Water Act Section 316(b)
23 Phase II Study.

24
25 Q. Please describe the Big Bend Unit 3 Flue Gas

1 Desulfurization Integration and the Big Bend Units 1 and 2
2 Flue Gas Desulfurization activities and provide the
3 estimated O&M and capital expenditures for 2006.
4

5 **A.** The Big Bend Unit 3 Flue Gas Desulfurization Integration
6 program was approved by the Commission in Docket No.
7 960688-EI, Order No. PSC-96-1048-FOF-EI, issued August 14,
8 1996. The Big Bend Units 1 and 2 Flue Gas Desulfurization
9 program was approved by the Commission in Docket No.
10 980693-EI, Order No. PSC-99-0075-FOF-EI, issued January
11 11, 1999. In those Orders, the Commission found that the
12 programs met the requirements for recovery through the
13 ECRC. The programs were implemented to meet the SO₂
14 emissions requirements of the Phase I and II Clean Air Act
15 Amendments of 1990.
16

17 For 2006, there will be no capital expenditures for these
18 programs; however, Tampa Electric anticipates O&M expenses
19 for the Big Bend Unit 3 Flue Gas Desulfurization
20 Integration program and the Big Bend Units 1 and 2 Flue
21 Gas Desulfurization program to be approximately \$2,585,000
22 and \$5,148,000, respectively. The dominant component of
23 the expenses is projected to be reagents utilized in the
24 scrubbing process with the balance of expenses being
25 incurred for normal maintenance.

1 Q. Please describe the Gannon Thermal Discharge Study program
2 activities and provide the estimated O&M and capital
3 expenditures for 2006.

4
5 A. The Gannon Thermal Discharge Study program was approved by
6 the Commission in Docket No. 010593-EI, Order No. PSC-01-
7 1847-PAA-EI, issued September 14, 2001. In that Order, the
8 Commission found that the program met the requirements for
9 recovery through the ECRC. For 2006, there will be no
10 capital expenditures for this program; however, Tampa
11 Electric anticipates O&M expenses will be approximately
12 \$50,000.

13
14 Q. Please describe the Bayside SCR Consumables program
15 activities and provide the estimated capital and O&M
16 expenditures for 2006.

17
18 A. The Bayside SCR Consumables program was approved by the
19 Commission in Docket No. 021255-EI, Order No. PSC-03-0469-
20 PAA-EI, issued April 4, 2003. For 2006, there will be no
21 capital expenditures for this program; however, Tampa
22 Electric anticipates O&M expenses associated with the
23 consumable goods (primarily anhydrous ammonia) will be
24 \$65,000.

25

1 Q. Please describe the Big Bend Unit 4 SOFA program
2 activities and provide the O&M and capital expenditures
3 for 2006?
4

5 A. The Big Bend Unit 4 SOFA program was approved by
6 Commission for ECRC recovery in Docket No. 030226-EI,
7 Order No. PSC-03-0684-PAA-EI, issued June 6, 2003. In
8 that Order the Commission found that the program met the
9 requirements for recovery through the ECRC, contingent
10 upon Big Bend Unit 4 remaining coal fired. On August 19,
11 2004, Tampa Electric submitted a letter to the EPA
12 declaring the intent for Big Bend Units 1 through 4 to
13 remain coal fired and, as such, complied with the
14 applicable provisions of the CD associated with that
15 decision. The SOFA project was completed in 2004 and the
16 annual O&M expense for 2006 is anticipated to be
17 approximately \$75,000.
18

19 Q. Please describe the Clean Water Act Section 316(b) Phase
20 II Study program activities and provide the estimated
21 capital and O&M expenditures for 2006.
22

23 A. The Clean Water Act Section 316(b) Phase II Study program
24 was approved by the Commission in Docket No. 041300-EI,
25 Order No. PSC-05-0164-PAA-EI, issued February 10, 2005.

1 For 2006, there will be no capital expenditures for this
2 program; however, Tampa Electric anticipates O&M expenses
3 associated with the sampling activities will be
4 approximately \$761,000.

5
6 **Q.** Please describe long-term NO_x requirements associated with
7 the Orders and Tampa Electric's efforts to comply with the
8 requirements.

9
10 **A.** The Orders require Big Bend Unit 4 to begin operating with
11 an SCR system or other NO_x control technology, be
12 repowered, or be shut down and scheduled for dismantlement
13 by June 1, 2007. Big Bend Units 1, 2 and/or 3 must either
14 begin operating with an SCR system or other NO_x control
15 technology, be repowered, or be shut down and scheduled
16 for dismantlement by May 1, 2008, May 1, 2009 and May 1,
17 2010, respectively, one unit per year.

18
19 In order to meet the NO_x emission rates and timing
20 requirements of the Orders, Tampa Electric engaged an
21 experienced consulting firm, Sargent and Lundy, to assist
22 with the performance of a comprehensive study designed to
23 identify the long-range plans for the generating units at
24 Big Bend Station. The results of the study clearly
25 indicated that the option to remain coal-fired at Big

1 Bend Station and installing the necessary NO_x reduction
2 technologies is the most cost-effective alternative to
3 satisfy the NO_x emissions reductions required by the
4 Orders. This decision was communicated to the EPA and
5 FDEP in August 2004. Tampa Electric also apprised the
6 Commission of this decision in its filing made in Docket
7 No. 040750-EI in August 2004.

8
9 **Q.** Please describe the Big Bend Units 1 through 3 Pre-SCR and
10 the Big Bend Units 1 through 4 SCR projects and provide
11 estimated capital and O&M expenditures for 2006.

12
13 **A.** The Big Bend Units 1 through 3 Pre-SCR and the Big Bend
14 Unit 4 SCR projects were approved by the Commission in
15 Docket No. 040750-EI, Order No. PSC-04-0986-PAA-EI, issued
16 October 11, 2004. The Big Bend Units 1 through 3 SCR
17 projects were approved by the Commission in Docket No.
18 041376-EI, Order No. PSC-05-0502-PAA-EI, issued May 9,
19 2005. The purpose of the Pre-SCR technologies is to
20 reduce inlet NO_x concentrations to the SCR systems thereby
21 mitigating overall SCR capital and O&M costs. The SCR
22 projects at Big Bend Units 1 through 4 encompass the
23 design, procurement, installation and annual O&M expenses
24 associated with an SCR system for the units.

25

1 The 2006 projected costs for which Tampa Electric is
2 seeking ECRC recovery are for the Big Bend Units 1 through
3 3 Pre-SCR capital and O&M expenditures associated with the
4 engineering, procurement, construction, start-up, tuning,
5 operation and ongoing maintenance for the projects.
6 Specifically, the 2006 projected O&M expenses for Big Bend
7 Unit 1 Pre-SCR are \$50,000 with no capital expenditures
8 anticipated. The 2006 projected O&M expenses for Big Bend
9 Unit 2 Pre-SCR are \$75,000 with no capital expenditures
10 anticipated. The 2006 projected capital and O&M
11 expenditures for Big Bend Unit 3 Pre-SCR are \$776,000 and
12 \$25,000, respectively.

13
14 The 2006 projected capital expenditures for Big Bend Units
15 1 through 4 SCR projects are \$2,397,000, \$6,130,000,
16 \$28,204,000, and \$39,606,000, respectively. However, as
17 stated in Tampa Electric witness Howard T. Bryant's
18 Prepared Direct Testimony in this docket, the company will
19 not seek recovery of capital expenditures until the in-
20 service date for each project has occurred.

21
22 Q. Please describe how Tampa Electric reached the decision to
23 sell SO₂ emission allowances in 2005 and discuss the
24 company's allowance needs for 2006 and beyond.
25

1 A. After the completion of the repowering project at Bayside
2 Power Station, Tampa Electric performed a thorough
3 evaluation of SO₂ emission allowance needs based on
4 current system conditions and those projected to occur
5 over the next 20 years. Current system conditions
6 included the reduction in coal usage due to repowering and
7 the impacts of the CD and CFJ on SO₂ emission allowances.
8 Future conditions took into account generation expansion
9 and the impact of new federal environmental regulations on
10 SO₂ emission allowances, such as the Clean Air Interstate
11 Rule. At the conclusion of the evaluation, it became
12 evident that the company had a significant surplus of
13 allowances that could be sold in the allowance
14 marketplace. Furthermore, there will be a remaining
15 allowance inventory that will meet the company's needs for
16 the next 20 years.

17
18 The decision to sell surplus SO₂ allowances was enhanced
19 by the recent high allowance prices available in the
20 marketplace due to increased industry demand. In
21 balancing the appropriate quantity to sell with the
22 company's expected future needs, Tampa Electric sold
23 approximately 125,000 allowances generated from 2002
24 through 2005. The company will continue to evaluate
25 potential sales opportunities of any future quantities of

1 surplus allowances.

2
3 Q. Please summarize your testimony.

4
5 A. Tampa Electric's settlement agreements with FDEP and EPA
6 require significant reductions in emissions from Tampa
7 Electric's Big Bend and Gannon Stations. The Orders
8 established definite requirements and time frames in which
9 air quality improvements must be made and result in
10 reasonable and fair outcomes for Tampa Electric, its
11 community and customers, and the environmental agencies.
12 My testimony identified projects which are legally
13 required by the Orders. I described the progress Tampa
14 Electric has made to achieve the more stringent
15 environmental standards. I have identified estimated
16 costs, by project, which the company expects to incur in
17 2006. Additionally, my testimony identified other
18 projects which are required for Tampa Electric to meet
19 environmental requirements and I provided associated 2006
20 activities and projected expenditures. Finally, I
21 addressed the prudent sales of SO₂ emissions allowances
22 that occurred in 2005 and demonstrated that Tampa
23 Electric's approach toward the allowance quantity
24 contained in the sales has not jeopardized the company's
25 long-term future allowance needs.

1 Q. Does this conclude your testimony?

2

3 A. Yes it does.

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25