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COMMISSION
CLERK

August 29, 2011

110262-E1

HAND DELIVERED

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

Re: Petition of Tampa Electric Company for Approval of a New Environmental Program for Cost Recovery Through the Environmental Cost Recovery Clause


Dear Ms. Cole:

Enclosed for filing in the above docket are the original and fifteen (15) copies of Tampa Electric Company's Petition for approval of a new environmental program for cost recovery through the Environmental Cost Recovery Clause.

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

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Enclosure

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FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Tampa Electric Company)
for approval of a new environmental)
program for cost recovery through)
the Environmental Cost Recovery Clause.)
_____)

DOCKET NO. 110262-EI
FILED: August 29, 2011

**PETITION OF TAMPA ELECTRIC COMPANY FOR APPROVAL OF
A NEW ENVIRONMENTAL PROGRAM FOR COST RECOVERY
THROUGH THE ENVIRONMENTAL COST RECOVERY CLAUSE**

Tampa Electric Company ("Tampa Electric" or "the company"), by and through its undersigned counsel, and pursuant to Section 366.8255, Florida Statutes, and Florida Public Service Commission ("Commission") Order Nos. PSC-94-0044-FOF-EI and PSC-94-1207-FOF-EI, hereby petitions this Commission for approval of the company's proposed environmental compliance program – New Big Bend Station Gypsum Storage Facility – for cost recovery through the Environmental Cost Recovery Clause ("ECRC").

1. Tampa Electric is an investor-owned electric utility subject to the Commission's jurisdiction pursuant to Chapter 366, Florida Statutes. Tampa Electric serves retail customers in Hillsborough and portions of Polk, Pinellas and Pasco Counties in Florida. The company's principal offices are located at 702 North Franklin Street, Tampa, Florida 33602.

2. The persons to whom all notices and other documents should be sent in connection with this docket are:

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3. In order to continue operating its Big Bend Units 1 through 4 in compliance with applicable environmental requirements, Tampa Electric needs to construct and place into service a new facility at Big Bend Station within which to store gypsum, which is a necessary by-product of the operation of flue gas desulfurization ("FGD") systems, commonly referred to as "scrubbers", currently serving these coal-fired units.

4. This Commission on a number of occasions has recognized that the operation of FGD systems to scrub the flue gases emanating from Big Units 1 through 4 is an essential requirement for compliance with the Clean Air Act Amendments of 1990 ("CAAA") and the company's 2000 Consent Decree with the United States Environmental Protection Agency ("Consent Decree").

5. In 1996 the Commission approved for ECRC cost recovery the capital costs and O&M expenses associated with Big Bend Unit 3 FGD Integration Project to enable the Big Bend Unit 4 FGD system to be used to scrub the flue gas from Big Bend Unit 3 as well. In so doing the Commission found that the project satisfied the requirements of both Phase I and Phase II of CAAA. (Order No. PSC-96-1048-FOF-EI, issued August 14, 1996 in Docket No. 960688-EI).

6. In 1999 the Commission approved, for ECRC cost recovery purposes, the costs incurred by Tampa Electric in constructing and installing the FGD system to serve Big Bend Units 1 and 2, finding this to be the most cost-effective alternative for compliance with the SO₂ emissions reduction requirements of Phase II of CAAA. (Order No. PSC-99-0075-FOF-EI, issued January 11, 1999 in Docket No. 980693-EI).

7. In 2007 the Commission approved for cost recovery through the ECRC costs associated with Tampa Electric Company's Big Bend Flue Gas Desulfurization System Reliability Program for improved reliability of the FGD systems on Big Bend Units 1, 2 and 3.

In so doing the Commission acknowledged that the projects included in that program were needed to comply with the Consent Decree which memorialized the settlement of EPA's complaint regarding Tampa Electric's Big Bend Units' compliance with the CAAA. (Order No. PSC-07-0499-FOF-EI, issued June 11, 2007 in Docket No. 050958-EI). In that decision the Commission acknowledged that the Consent Decree requires that the Big Bend Units not operate unscrubbed after 2010 (for Big Bend Unit 3) and 2013 (for Big Bend Units 1 and 2).

8. As previously stated, operation of the FGD systems serving Big Bend Units 1 through 4 results in the production of gypsum which is an essential by-product of the operation of the FGD systems. Tampa Electric has been able to sell a portion of the gypsum by-product to manufacturers who use it in the production of sheetrock, also known as wallboard. Despite these sales, Tampa Electric over time has been left with a surplus of gypsum by-product from the operation of its FGD systems at Big Bend Station. The company has stored the excess gypsum in a storage facility on site at Big Bend Station. The storage capacity of the existing gypsum storage facility is nearly exhausted and the company must increase its gypsum storage capacity by constructing a new gypsum storage facility on site at Big Bend Station.

9. The new gypsum storage facility is estimated to require an investment of approximately \$54,976,700 in capital costs and annual operation and maintenance expenses of \$365,000. Details regarding the necessity for the new gypsum storage facility and costs relating thereto are contained in the document entitled New Gypsum Storage Facility Justification attached hereto as Exhibit "A" and by reference made a part hereof. Exhibit "B" to this Petition sets forth a net present value analysis of each of the alternatives analyzed by the company for purposes of meeting its gypsum storage needs at Big Bend Station.

10. The Commission's policy for initial cost recovery approval of an ECRC eligible project is set forth in Order No. PSC-94-0044-FOF-EI issued January 12, 1994 in Docket No. 930613-EI, In re: Gulf Power Company, (the Gulf Order) as follows:

Upon petition, we shall allow the recovery of costs associated with an environmental compliance activity through the environmental cost recovery factor if:

1. such costs were prudently incurred after April 13, 1993;
2. the activity is legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the company's last test year upon which rates are based; and,
3. such costs are not recovered through some other cost recovery mechanism or through base rates.

11. The Commission has interpreted the Gulf Order criteria to require that projects eligible for ECRC cost recovery must be required to comply with, or remain in compliance with, a governmentally imposed environmental regulation. (See, e.g., Order No. PSC-11-0080-PAA-EI, issued January 31, 2011 in Docket No. 100404-EI).

12. In a 1999 Gulf Power decision in Docket No. 990677-EI the Commission approved a Gulf Power sodium injection project for ECRC cost recovery, observing:

. . .we approved the project both to comply with new Clean Air Act Amendments (CAAA) Phase II requirements and to maintain compliance with existing permit requirements. . . (Emphasis supplied)

13. In Order No. 11-0080, referred to above, the Commission observed:

. . .In Docket No. 980007-EI, In re: Environmental Cost Recovery Clause, we approved Gulf's additional ground water monitoring equipment to continue to comply with an existing environmental requirement, because greater treatment capacity was needed. (Emphasis supplied)

14. The Commission went on in Order No. 11-0080 to refer to its prior approval of a turtle net project for FPL, noting that:

These additional activities were not specifically required by . . . [the NRC license]. . . FPL explained that they were necessary to insure that the net worked properly so it could continue to comply with its NRC license. . . (Emphasis supplied)

15. The Commission further noted in Order No. 11-0080 that it had approved a modular cooling tower project for Progress Energy Florida ("PEF") in order to allow PEF to continue compliance with wastewater discharge standards required by the Florida Department of Environmental Protection. The Commission noted that increased inlet water temperatures from the Gulf during the summers of 2004 and 2005 forced PEF to reduce the output of its plants in order to remain in compliance with its discharge permit. The Commission observed that the modular cooling towers along the discharge canal provided additional cooling capacity that allowed PEF to comply with its permit and avoid numerous, expensive derates of its base load generating units.

16. Tampa Electric cannot continue operating Big Bend Units 1 through 4 in compliance with the CAAA and the Consent Decree without a means of disposing of the gypsum that is an essential by-product of the operation of the FGD systems serving the Big Bend units. The proposed storage facility at Big Bend Station is the most reliable and cost-effective alternative for accomplishing this objective. Construction and operation of the new gypsum storage facility is not a discretionary or voluntary project. Instead, it is an essential environmental project that would not be constructed but for Tampa Electric's obligation to scrub the flue gases emanating from its Big Bend coal fired units consistent with the CAAA and Consent Decree.

17. The new gypsum storage facility merits ECRC cost recovery under the Gulf Order criteria. All costs associated with the project will be prudently incurred after April 13, 1993. The need to construct the new storage facility is required in order for Tampa Electric to continue complying with governmental environmental mandates under the CAAA and the Consent Decree. The need to construct the new storage facility has been triggered after the company's last test year upon which rates are currently based. Finally, the costs of the new storage facility are not recovered through some other cost recovery mechanism or through base rates. Like the Gulf Power ECRC project approved in Docket No. 980007-EI, the new gypsum storage facility is needed to enable Tampa Electric to continue complying with applicable environmental mandates because greater storage capacity is needed.

18. Tampa Electric expects to begin incurring costs associated with the new gypsum storage facility in 2011. Because this project is appropriate for AFUDC accounting treatment, the costs of the project will be separately accounted for while the new storage facility is under construction. These costs will not be proposed for inclusion in the company's ECRC cost recovery until after the new storage facility is placed in service, which is expected to occur in early 2015. All of this would be subject to audit by the Commission.

19. This program is a compliance activity associated with the requirements of the CAAA and the Consent Decree; therefore, expenditures should be allocated to rate classes on an energy basis.

20. Tampa Electric is not aware of any disputed issues of material fact relative to the matters set forth in this petition.

WHEREFORE, Tampa Electric Company respectfully requests the Commission to approve the company's proposed New Big Bend Station Gypsum Storage Facility program and

the company's recovery of the carrying costs and O&M expenses of this program through the ECRC in the manner described herein.

DATED this 29th day of August 2011.

Respectfully submitted,



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Ausley & McMullen
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Tallahassee, FL 32302
(850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

EXHIBIT "A"

New Gypsum Storage Facility Justification

New Gypsum Storage Facility Justification

Legal Necessity

Tampa Electric Company's petition in this docket seeks ECRC cost recovery of a new gypsum storage facility which will enable the company to remain in compliance with the Clean Air Act Amendments of 1990 ("CAAA") and Tampa Electric's obligations under a 2000 Consent Decree with the United States Environmental Protection Agency ("Consent Decree"). Phases I and II of CAAA required significant two-step reductions in sulfur dioxide ("SO₂") emissions from fossil-fired power plants in the United States, including Big Bend Units 1 through 4. The Consent Decree memorializes the settlement of an EPA complaint proceeding regarding Tampa Electric's compliance with CAAA. As reflected in the Commission decisions cited in the company's petition, the Commission has recognized on a number of occasions that Tampa Electric's operation of its flue gas desulfurization ("FGD") systems to remove, or "scrub", SO₂ from the flue gases emanating from Big Bend Units 1 through 4 is an essential requirement for the company to comply with both CAAA and the Consent Decree. Consistent with that recognition, the Commission has approved ECRC cost recovery of the capital and O&M requirements for a number of programs designed to enable Tampa Electric to construct and operate its FGD systems at Big Bend Station and to improve the reliability of those systems.

Tampa Electric's petition also cites decisions where the Commission has interpreted Section 366.8255, Florida Statutes, to require that projects eligible for cost recovery through the ECRC must be required to comply with, or remain in compliance with, a governmentally-imposed environmental regulation. As detailed below, Tampa Electric's proposed construction and operation of a new gypsum storage facility at Big Bend Station is an essential component of the company's ability to continue operating its Big Bend coal-fired units in compliance with both the CAAA and the Consent Decree.

FGD System Operation and Gypsum By-Product Production

The FGD systems at Big Bend Station are operated to remove over 90 percent of the SO₂ from the flue gas produced from the combustion of coal in Big Bend Units 1 through 4. In these systems, the flue gases produced by coal combustion are directed upward through absorber towers where a mixture of finely ground limestone and water is sprayed downward. As the flue gas and limestone slurry come in contact, the SO₂ reacts with the calcium in the limestone to form calcium sulfite. Calcium sulfite is a sludge-like product with no commercial value, requiring disposal in a landfill. The forced oxidation FGD process used at Big Bend forces air into the calcium sulfite slurry which oxidizes it into calcium sulfate, commonly known as gypsum. The gypsum slurry is then pumped to a dewatering system which produces a relatively dry filter cake.

Tampa Electric has a long-standing objective of maximizing the beneficial reuse of all combustion by-products. The gypsum produced by the Big Bend FGD systems is used as raw material for products such as wallboard, cement and agricultural soil amendment. This results in lower environmental impacts, reduces the need for permanent landfills/impoundments and provides a revenue stream which reduces environmental cost recovery clause expenses.

Required operation of the FGD systems at Big Bend results in the production of approximately 700,000 tons of gypsum per year. The production rate of gypsum is dependent on the amount of fuel and the sulfur content of the fuel used in the generating units for the production of electricity. The majority of this gypsum is sold to National Gypsum's Gold Bond Building Products division where it is used as raw material in the production of wallboard. National Gypsum operates a wallboard manufacturing facility in Apollo Beach adjacent to Big Bend Station. Gypsum which does not meet the specifications for use in manufacturing

wallboard, at times can be sold to the cement industry or for agricultural applications. Gypsum quality (moisture, chloride content, etc.) must be ascertained prior to shipment, thus it is segregated and stored on site pending the results of these quality tests. The need for gypsum is dependent on the demand for finished products (wallboard, cement, etc.). Due to the variations in supply and demand for gypsum, and the need for quality assurance, adequate on-site storage is required to manage the logistics involved. The amount of storage needed is related to the quantity of gypsum produced and the differences between supply and demand over time.

The Company's Existing Storage Facility

The existing gypsum storage facility was constructed as part of the installation of Big Bend Unit 4 in 1984. It was designed to handle the amount of material being produced from Unit 4 (the only unit with an FGD system at that time). The storage facility is approximately 30 acres in size and is fed from the plant via a conveyor system with a rotary stacker. Gypsum is either loaded onto trucks for sale or moved to the pile via front end loaders for temporary storage.

In 1995, in order to comply with Clean Air Act requirements, Tampa Electric modified the FGD system in place on Unit 4 such that it could also scrub the flue gas being produced by Unit 3. This nearly doubled the gypsum input to the storage facility. In 2000, in order to comply with the Acid Rain Program Phase 2 of the Clean Air Act, Tampa Electric constructed a new FGD system to scrub the flue gas being produced from Big Bend Units 1 and 2. This change again nearly doubled the gypsum input to the storage facility. Since that time, Tampa Electric has worked diligently to manage the logistics of gypsum production and consumption. The amount of material in temporary storage has varied with supply and demand but has now grown to the point where the existing area is nearly full and does not provide the necessary space to

properly manage the gypsum inventory. An additional storage area is needed to effectively handle the quantity of gypsum produced by the four scrubbed units at Big Bend.

The existing gypsum storage facility and associated conveyor systems were built according to the requirements in place during the early 1980s. Since that time, the facility has experienced issues with periodic dust emissions and with uncertainty over protection from ground water contamination. A new area constructed to current environmental standards will include advanced dust control and liner systems. The existing storage area would continue to be utilized and serve as a secondary storage area once the new storage facility is built. In the future, the company may need to retrofit the existing storage area with a new liner for ground water protection.

Proposed New Storage Facility

The design for the company's proposed new gypsum storage facility will consist of a new lined gypsum pile management area and equipment for conveying, stacking, dry storage and truck loading of gypsum. The new storage facility will cover approximately 27 acres and will have a liner system consisting of geosynthetic clay lining and a geomembrane, overlain by two feet of compacted gypsum. Perimeter berms will provide gypsum containment. Storm water will be collected and piped to a recycle pond for treatment and reuse.

The handling system at the new gypsum storage facility will provide the ability to move, stack and load out or store the gypsum output from the FGD system serving Units 1 through 4. The new gypsum handling equipment will include a conveyor system, designed to minimize dust emissions, which will convey the gypsum to a radial stacker. The radial stacker will be used to create four gypsum storage piles of 1,000 tons each, 30 feet high and 60 feet in diameter. This will allow the gypsum to be sorted and stored in a manner which will enable it to be sold for

manufacturing uses as the market permits. Other conveyor systems will transport the gypsum to a load-out silo used to discharge gypsum into trucks as well as to the top of a concrete local storage dome 200 feet in diameter and 90 feet high, creating a 25,000 ton conical pile inside the dome. Two covered driveways are provided to permit trucks to drive into the dome and be loaded with front end loaders.

Costs of New Storage Facility

Set forth below are Tampa Electric's essential capital costs of the new gypsum storage facility, broken out by major activity:

Construction Activities	\$11,229,900
Engineering	3,583,000
Major Equipment	17,173,900
Floodplain Compensation, Wetlands Mitigation	5,442,500
Project/Construction Management	4,347,500
Silo & Stackout	2,300,000
Storage Area Liner	2,756,700
Contingency	8,143,200
Total Gypsum Storage	\$54,976,700

The company expects to expend the following amounts during each calendar year during the construction project:

<u>Year</u>	<u>Total for Year</u>
2011	\$ 1,772,000
2012	\$ 9,023,000
2013	\$ 11,378,600
2014	\$ 24,972,400
2015	\$ 7,830,700
Grand Total:	\$ 54,976,700

Project Timeline to Meet Targeted April 2015 In-Service Date

A significant amount of coordinated effort will be required to meet the targeted in-service date for the new gypsum storage facility, as the following schedule reflects:

Preliminary Engineering Submittal	March 2012
Complete Engineering/FDEP Approval	October 2012
Complete Permitting/Licensing, Bid and Award Construction	October 2013
Construction Complete	April 2015

New Gypsum Storage Facility Design Is the Most Cost-Effective Alternative

Tampa Electric considered various alternatives for meeting its gypsum storage needs at Big Bend Station and determined that this project is the most cost-effective means to enable the company to continue operating its Big Bend coal-fired units in compliance with environmental requirements. A net present value analysis of each of the alternatives considered is included in Exhibit "B" to the company's petition. Alternatives considered are provided below.

Reduction in fuel sulfur content

Tampa Electric examined the potential for switching to a low sulfur coal in an effort to lessen the amount of gypsum produced in the scrubbing process. By producing less gypsum, the amount of on-site storage could also be reduced and the need for the new storage area could be deferred or eliminated. The company currently pays approximately \$3.40/MMBTU for coal delivered to its Big Bend units. If Tampa Electric were to switch to a low sulfur coal there would be several supplier options available. The most cost-effective low-sulfur coal delivered option on a \$/MMBTU basis is from the Powder River Basin ("PRB") or PRB coal. Low-sulfur PRB coal currently sells for about \$4.30/MMTU delivered, or approximately a 25 percent

premium over the company's existing steam coals. Additionally, PRB coal also has certain characteristics which would pose operational, handling and environmental problems due to its highly combustible nature. Modifications would have to be made at Big Bend Station in order to safely handle coal with PRB's properties. Burning 105,000,000 MMBTUs of coal, the amount projected in Tampa Electric's 2011 fuel filing, at the higher cost of \$4.30/MMBTU, would translate to approximately \$94.5 million in additional fuel costs per year.

Other low sulfur coal options from Colorado and other regions would also be available, but the price differential on those would be greater than PRB coal which would result in even greater impacts to fuel costs. It is also worth noting that utilizing low sulfur coal will only reduce and not eliminate the production of gypsum by-product; therefore, the gypsum storage/disposal problem would only be mitigated, not eliminated. Reduction in fuel sulfur content is a more expensive and less desirable option than the proposed new gypsum storage area.

Off-site landfill

Tampa Electric also considered the option of permanently disposing its gypsum by-product in a landfill. It is common industry practice (nationally and in Florida) to construct a company owned and controlled landfill, sized to contain the entire by-product production amount for the life of the facility. In the original design of the Big Bend facility it was recognized a landfill of this size was not practical or cost-effective at the Big Bend site due to space limitations and proximity to populated areas. As a result the company chose to rely on beneficial re-use as the primary disposal mechanism for FGD gypsum. In lieu of constructing the new on-site temporary storage area, the company did consider the option of developing an off-site landfill facility capable of permanently disposing the future gypsum production from the Big

Bend units. Such a landfill would be over 400 acres in size, cost approximately \$95 million dollars to construct and would have an operating and maintenance expense of approximately \$109 million over the life of the facility. The estimated expense for the closure of such a landfill is \$65 million.

The off-site landfill option was clearly a higher cost option than the proposed facility. In addition, landfilling the gypsum would be counter to the company's goal to protect the environment and preserve natural resources as permanent disposal of gypsum in a landfill eliminates the potential for beneficial reuse and sale of this material.

Third party landfill

Tampa Electric considered the option of disposing of gypsum in a third party commercial landfill. There are very few commercial landfills that are authorized to dispose of gypsum as a solid waste. The company has used the Okeechobee Landfill in Okeechobee, Florida to dispose of similar solid wastes in the past. This facility is located approximately 140 miles from the Big Bend site which makes transportation a major expense along with the tipping fees charged by the landfill. The company currently produces approximately 700,000 tons of gypsum by-product annually. Attempting to dispose of this amount in commercial landfills would cost an estimated \$25 million per year at current disposal rates. The quantity of gypsum material produced would be a challenge for commercial landfills to accept. While the large Okeechobee commercial landfill is 833 acres in size, Tampa Electric estimates a single purpose landfill sized to hold only the future production of gypsum from Big Bend would need to be 436 acres. Offsite landfilling would be prohibitively expensive and at risk of becoming an unavailable option at any price. Moreover, none of the offsite landfilled gypsum would be available for subsequent sale to

manufacturers and agricultural interests. Also, as previously stated landfilling the gypsum would not be supportive of the company's important role as an environmental steward.

Aside from the financial considerations of permanent gypsum disposal in an off-site third party landfill, there is an unacceptable reliability risk for this approach. Current environmental regulations prohibit operating Big Bend Units 1 through 4 without the FGD systems in service. When the FGD systems and gypsum storage area were designed, it was allowable to operate unscrubbed for a limited number of days each year. The allowance for unscrubbed operation no longer exists. With the rules currently in place, the Big Bend Units would need to be shut down if the on-site storage area was full and there was no means to dispose of gypsum. Third party landfills would have no obligation to take material from specific sources and could refuse to accept gypsum at any time. With over 1,600 MW of generation at risk, the company could not rely solely on a third party landfill as its disposal option.

Alternative designs for new storage area

Tampa Electric considered several design options for the new storage area. Transportation of gypsum from the FGD system to the new storage site could be accomplished by conveyor system, by rail or by truck. The most cost-effective design option was determined to be to transport the gypsum by conveyor. The selected design utilizes a conveyor belt which folds around the material being conveyed forming a total enclosure that eliminates spillage and fugitive dust. This design is capable of making turns without discharge from one straight conveyor run to another. This minimizes capital expense and provides superior environmental performance over conventional conveyors as well as rail and trucking options.

Qualification of Project for ECRC Approval

Tampa Electric must continue operating Big Bend Units 1 through 4 to meet its obligation to serve. The company cannot operate these units unscrubbed, consistent with CAAA and the Consent Decree, nor can the company operate the units scrubbed without a new facility within which to store the gypsum by-product of the scrubbing process. The need for the new facility has arisen subsequent to the test year of the company's last base rate proceeding and all costs of constructing and operating the facility will be prudently incurred subsequent to April 13, 1993. As shown above and delineated in Exhibit "B" to the company's petition, the proposed new gypsum storage facility is the most cost-effective means for Tampa Electric to comply with CAAA and the Consent Decree and the costs of this project are not being recovered through base rates or any other cost recovery mechanism.

EXHIBIT "B"
Net Present Value Analysis

Tampa Electric Company
Gypsum Options NPV
(in Dollars)

Year	New Storage Area Conveyor	New Storage Area Rail	New Storage Area Truck	Fuel Switch Low Sulfur Coal	Offsite Landfill
2013					\$25,731,030
2014					25,290,379
2015	\$7,202,564	\$7,347,893	\$6,885,325	\$94,500,000	24,851,142
2016	6,907,007	6,996,852	6,597,040	96,579,000	24,413,373
2017	6,629,594	6,639,237	6,302,741	98,703,738	23,977,093
2018	6,423,197	6,351,928	6,079,313	100,875,220	23,542,325
2019	6,167,739	6,118,859	5,910,708	103,094,475	23,109,114
2020	5,907,519	5,881,334	5,738,242	105,362,554	22,677,494
2021	5,622,709	5,619,528	5,542,102	107,680,530	22,247,500
2022	5,375,684	5,394,824	5,383,686	110,049,501	21,819,152
2023	5,137,701	5,180,492	5,236,275	112,470,590	21,392,511
2024	4,871,564	4,938,340	5,061,694	114,944,943	20,967,604
2025	4,622,596	4,713,688	4,905,275	117,473,732	20,544,461
2026	4,371,872	4,487,633	4,748,130	120,058,154	20,123,126
2027	4,124,195	4,263,982	4,594,083	122,699,434	19,703,649
2028	3,857,281	4,022,454	4,422,865	125,398,821	19,286,062
2029	3,604,117	3,795,044	4,266,491	128,157,595	18,870,396
2030	3,348,392	3,565,459	4,108,675	130,977,062	18,456,713
2031	3,101,983	3,344,573	3,960,319	133,858,558	18,045,049
2032	2,828,797	3,098,304	3,787,350	136,803,446	17,635,446
2033	2,566,642	2,863,474	3,626,609	139,813,122	17,227,943
2034	2,306,609	2,631,178	3,469,208	142,889,010	16,822,604
2035	2,247,471	2,599,200	3,512,948	146,032,569	16,419,466
2036	2,494,758	2,875,075	3,865,386	149,245,285	16,018,570
2037	2,246,645	2,655,995	3,723,728	152,528,681	15,619,976
2038	2,506,019	2,943,856	4,089,890	155,884,312	15,223,737
2039	2,567,418	3,035,198	4,260,432	159,313,767	14,829,898
2040	2,300,681	2,798,876	4,104,228	162,818,670	14,438,505
2041	2,490,669	3,019,766	4,406,172	166,400,681	14,049,630
2042	2,566,814	3,126,298	4,594,723	170,061,496	13,663,317
2043	2,344,327	2,935,702	4,487,227	173,802,849	13,279,620
2044	2,118,774	2,742,557	4,377,981	177,626,512	12,898,601
2045	1,898,055	2,553,770	4,274,218	181,534,295	12,520,324
2046	1,674,931	2,364,112	4,170,632	185,528,049	12,144,843
2047	1,449,950	2,173,146	4,066,808	189,609,666	11,772,210
2048	1,222,713	1,979,487	3,961,383	193,781,079	11,402,508
2049	1,000,124	1,792,049	3,863,299	198,044,263	11,035,792
NPV	\$61,301,204	\$63,153,339	\$65,847,266	\$1,501,498,730	\$259,281,417

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

The undersigned Mark J. Hornick, first being duly sworn, deposes and says:

1. I am employed as Director, Planning Engineering & Construction for Tampa Electric Company.

2. I have reviewed the above Petition of Tampa Electric Company for Approval of a New Environmental Program for Cost Recovery through the Environmental Cost Recovery Clause, and the facts stated in that petition are true and correct to the best of my knowledge, information and belief.

Mark J. Hornick

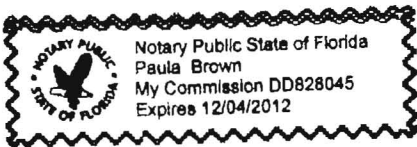
Mark J. Hornick

Sworn to and subscribed before me by Mark J. Hornick, who:

() is personally known to me
(X) presented Florida Drivers License Number H 652-550-56-324-0, as identification this 26th day of August, 2011.

Paula K. Brown

Notary Public



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