

AUSLEY & MCMULLEN

ORIGINAL

ATTORNEYS AND COUNSELORS AT LAW

227 SOUTH CALHOUN STREET
P.O. BOX 391 (ZIP 32302)
TALLAHASSEE, FLORIDA 32301
(850) 224-9115 FAX (850) 222-7560

May 19, 1998

HAND DELIVERED

Ms. Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
101 East Gaines Street
Tallahassee, Florida 32399-0850

Re: Environmental Cost Recovery Clause
FPSC Docket No. 980007-EI

Dear Ms. Bayo:

Enclosed for filing in the above docket, on behalf of Tampa Electric Company, are the original and fifteen (15) copies of Prepared Director Testimony and Exhibit of Karen O. Zwolak.

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

ACK ✓
AFA JDB/pp
APP —ee: All Parties of Record (w/encls.)
CAF —
CMU —
CTR —
EAG 1 RECEIVED & FILED
LEG 1
LIN 31 FPSC-BUREAU OF RECORDS
OPC —
RCH —
SEC 1
WAS —
OTH —

DOCUMENT NUMBER-DATE

05560 MAY 19 98

FPSC-RECORDS/REPORTING

Ms. Blanca S. Bayo
May 19, 1998
Page Two

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing Testimony and Exhibit, filed on behalf of Tampa Electric Company, has been furnished by hand delivery (*) or U. S. Mail on this 19th day of May, 1998 to the following:

Ms. Leslie G. Paugh*
Staff Counsel
Division of Legal Services
Florida Public Service Comm'n.
2540 Shumard Oak Boulevard
Room 370, Gunter Building
Tallahassee, FL 32399-0872

Mr. John Roger Howe
Office of Public Counsel
111 West Madison Street
Suite 812
Tallahassee, FL 32399-1400

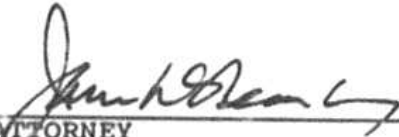
Mr. John W. McWhirter, Jr.
McWhirter, Reeves, McGlothlin,
Davidson, Rief & Bakas, P.A.
P. O. Box 3350
Tampa, FL 33601-3350

Ms. Gail Kamaras
Legal Environmental
Assistance Foudation
1115 North Gadsden Street
Tallahassee, FL 32303-6327

Mr. Joseph A. McGlothlin
McWhirter, Reeves, McGlothlin,
Davidson, Rief & Bakas, P.A.
117 South Gadsden Street
Tallahassee, FL 32301

Mr. Matthew M. Childs
Steel Hector & Davis
215 S. Monroe Street, Suite 601
Tallahassee, FL 32301

Mr. G. Edison Holland
Mr. Jeffrey A. Stone
Beggs and Lane
Post Office Box 12950
Pensacola, FL 32576


ATTORNEY

ORIGINAL

**TAMPA ELECTRIC COMPANY
DOCKET NO. 980007-EI
FILED: MAY 19, 1998**

**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION
TAMPA ELECTRIC COMPANY
DOCKET NO. 980007-EI
ENVIRONMENTAL COST RECOVERY
FINAL TRUE-UP
OCTOBER 1997 - MARCH 1998
TESTIMONY AND EXHIBIT OF
KAREN O. ZWOLAK**

DOCUMENT NUMBER-DATE
05560 MAY 19 98
FPSC-RECORDS/REPORTING

BEFORE THE PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

KAREN O. ZWOLAK

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

Q. Please state your name, address, occupation and employer.

A. My name is Karen O. Zwolak. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company in the position of Manager, Energy Issues in the Electric Regulatory Affairs Department.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelor of Arts Degree in Microbiology in 1977 and a Bachelor of Science degree in Chemical Engineering in 1985 from the University of South Florida. I began my engineering career in 1986 at the Florida Department of Environmental Regulation and was employed as a Permitting Engineer in the Industrial Wastewater Program. In 1990, I joined Tampa Electric Company as an engineer in the Environmental Planning Department and was responsible for permitting and compliance issues relating to wastewater treatment and disposal. In 1995, I transferred to Tampa

1 Electric's Energy Supply Department and assumed the duties
2 of the plant chemical engineer at the F. J. Gannon Station.
3 In this position, I was responsible for boiler chemistry,
4 water management, and maintenance of environmental
5 equipment and general engineering support. In 1997, I was
6 promoted to Manager, Energy Issues in the Electric
7 Regulatory Affairs Department. My present responsibilities
8 include the areas of fuel adjustment, capacity cost
9 recovery, environmental filings and rate design.

10
11 Q. What is the purpose of your testimony in this proceeding?

12
13 A. The purpose of my testimony is to present, for Commission
14 review and approval, the actual true-up amount and the
15 calculations thereof associated with the environmental
16 compliance activities for the period October 1997 through
17 March 1998.

18
19 Q. Do you wish to sponsor exhibits in support of your
20 testimony?

21
22 A. Yes. My Exhibit No. ___(KOZ-1) consists of eight forms
23 which were prepared under my direction and supervision.
24 Form 42-1A reflects the final true-up for the October 1997
25 - March 1998 period; Form 42-2A consists of the final true-

1 up calculation for the period; Form 42-3A consists of the
2 calculation of the Interest Provision for the period; Form
3 42-4A reflects the calculation of variances between actual
4 and projected costs for O & M Activities; Form 42-5A
5 presents a summary of actual monthly costs for the period
6 for O & M Activities; Form 42-6A reflects the calculation
7 of variances between actual and projected costs for Capital
8 Investment Projects; Form 42-7A presents a summary of
9 actual monthly costs for the period for Capital Investment
10 Projects and Form 42-8A consists of the calculation of
11 depreciation expense and return on capital investment.
12

13 Q. What is the source of the data which you will present by
14 way of testimony or exhibits in this processing?
15

16 A. Unless otherwise indicated, the actual data is taken from
17 the books and records of Tampa Electric Company. The books
18 and records are kept in the regular course of our business
19 in accordance with generally accepted accounting principles
20 and practices, and provisions of the Uniform System of
21 Accounts as prescribed by this Commission.
22

23 Q. What is the actual true-up amount which Tampa Electric is
24 requesting for the six-month period October 1997 through
25 March 1998?

- 1 A. Tampa Electric has calculated and is requesting approval of
2 an over/(under) - recovery of (\$127,073) as the actual
3 true-up amount for the six-month period.
4
- 5 Q. What is the adjusted net true-up amount which Tampa
6 Electric is requesting for the October 1997 through March
7 1998 period which is to be carried over and refunded/
8 recovered in the next projection period?
9
- 10 A. Tampa Electric has calculated and is requesting approval of
11 an over/(under) recovery of \$351,717 as the adjusted net
12 true-up amount for the six-month period. This adjusted net
13 true-up amount is the difference between the actual
14 over/(under) recovery of (\$127,073) for the period October
15 1997 through March 1998 and the actual/estimated true-up
16 for the same period of an over/(under) recovery of
17 (\$478,790) approved in FPSC Order No. PSC-98-0408-FOY-EI.
18 This is shown on Form 42-1A.
19
- 20 Q. Is this true-up calculation consistent with the true-up
21 methodology used for other cost recovery clauses?
22
- 23 A. Yes, it is. The calculation of the true-up amount follows
24 the procedures established by this Commission as set forth
25 on Commission Schedule A-2 "Calculation of True-Up and

1 Interest Provision for the Fuel Cost Recovery Clause."

2

3 Q. Are all costs listed in Forms 42-4A through 42-8A
4 attributable to Environmental Compliance projects approved
5 by the Commission?

6

7 A. Yes, they are.

8

9 Q. How did actual expenditures for October 1997 through March
10 1998 compare with Tampa Electric's actual/estimated
11 projections as presented in previous testimony and
12 exhibits?

13

14 A. As shown on Form 42-4A, O & M costs were \$427,652 lower
15 than actual/estimated projections, including the SO2
16 allowance credit from the Florida Municipal Power Agency
17 (FMPPA) wholesale sale. Form 42-6A shows Capital Investment
18 costs were \$1,518 higher than actual/estimated projections.
19 Significant O & M and Capital Investment project variances
20 are explained below.

21

22 O & M Variances:

23

24 Big Bend Unit 3 Flue Gas Desulfurization Integration
25 Project - Project expenditures were \$246,754 less than

1 projected, a variance of -27%, due to the deferral of
2 scheduled outages for Big Bend Units 3 and 4 until the
3 second quarter of this year.

4
5 2. SO2 Credit - FMFA - The SO2 allowance credit for the
6 FMFA wholesale sale was \$40,673 higher than the
7 actual/estimated projection.

8
9 Capital Investment Variances:

10
11 1. Big Bend Fuel Oil Tank #1 Upgrade, Big Bend Fuel Oil
12 Tank #2, Phillips Upgrade Tank #1 and Phillips Upgrade Tank
13 #4 - Form 42-6A show capital expenditures for the tank
14 upgrade projects were \$949 lower than actual/estimated
15 projections due to project deferrals.

16
17 2. The Gannon Ignition Oil Tank Project - Capital
18 expenditures were \$2,467 higher than actual/estimated
19 projections due to unexpected increases in material costs.

20
21 Q. Does this conclude your testimony?

22
23 A. Yes, it does.
24
25

**TAMPA ELECTRIC COMPANY
DOCKET NO. 980007-EI
FILED: MAY 19, 1998**

FINAL TRUE - UP

ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS 42-1A THROUGH 42-8A

OCTOBER 1997 - MARCH 1998

TAMPA ELECTRIC COMPANY
DOCKET NO. 980007-EI
FILED: MAY 19, 1998

FINAL TRUE - UP
ENVIRONMENTAL COST RECOVERY
COMMISSION FORMS 42-1A THROUGH 42-8A
OCTOBER 1997 - MARCH 1998
INDEX

<u>DOCUMENT NO.</u>	<u>TITLE</u>	<u>PAGE</u>
1	Form 42-1A	1
2	Form 42-2A	2
3	Form 42-3A	3
4	Form 42-4A	4
5	Form 42-5A	5
6	Form 42-6A	6
7	Form 42-7A	7
8	Form 42-8A	8

Form 42-1A

Tampa Electric Company
 Environmental Cost Recovery Clause (ECRC)
 Calculation of the Final True-Up Amount for the Period
 October 1997 to March 1998

<u>Period Amount</u>
(\$127,073)
<u>(478,790)</u>
<u>\$351,717</u>

- Line
- 1 End of Period Actual True-Up
for the Period October 1997 to March 1998
(Form 42-3A, Lines 5 + 8 + 10)
 - 2 Estimated/Actual True-Up Amount approved
for the Period October 1997 to March 1998
(Order No. PSC-98-0038-POF-EI)
 - 3 Final True-Up Amount to be refunded/(recovered) in the
projection period January 1999 to December 1999
(Lines 1 - 2)

() Reflects Underrecovery

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Final True-Up Amount for the Period
October 1987 to March 1988

End-of-Period True-Up Amount
 (in Dollars)

Line	October-87	November-87	December-87	January-88	February-88	March-88	End of Period Total
1 ECRC Revenues (net of Revenue Taxes)	\$710,245	\$593,826	\$805,479	\$848,824	\$685,962	\$595,026	\$3,739,192
2 True-Up Provision (Order No. 87-1047-FOF-EI)	(114,516)	(114,516)	(114,516)	(114,516)	(114,516)	(114,517)	(687,097)
3 ECRC Revenues Applicable to Period (Lines 1 + 2)	595,729	479,310	690,963	734,308	571,446	480,509	3,052,095
4 Jurisdictional ECRC Costs							
a. O & M Activities (Form 42-5A, Line 6)	535,786	475,529	400,189	280,139	251,133	341,965	2,284,741
b. Capital Investment Projects (Form 42-7A, Line 9)	147,336	146,666	144,208	148,771	149,043	152,074	887,495
c. Total Jurisdictional ECRC Costs	683,124	622,195	544,397	433	400,176	494,039	3,182,236
5 Over/Under Recovery (Line 3 - Line 4c)	(87,395)	(142,885)	(53,434)	95,803	71,300	(13,530)	(130,141)
6 Interest Provision (Form 42-3A, Line 10)	(264)	(269)	(199)	439	1,343	2,016	3,068
7 Beginning Balance True-Up & Interest Provision							
a. Deferred True-Up from April 1987 to September 1987 (Order No. PSC-88-0408-FOF-EI)	(687,097)	(680,240)	(688,878)	(627,895)	(417,237)	(230,078)	(687,097)
8 True-Up Collected/(Refunded) (see Line 2)	616,353	616,353	616,353	616,353	616,353	616,353	616,353
9 End of Period Total True-Up (Lines 5+6+7+8)	114,516	114,516	114,516	114,516	114,516	114,517	687,097
10 Adjustments to Period Total True-Up Including Interest	(43,887)	(72,525)	(11,642)	199,116	388,275	489,280	489,280
11 End of Period Total True-Up (Lines 9 + 10)	0	0	0	0	0	0	0
	(343,887)	(372,525)	(311,642)	199,116	388,275	489,280	489,280

N

Tampa Electric Company
 Environmental Cost Recovery Clause (ECRC)
 Calculation of the Final True-Up Amount for the Period
 October 1997 to March 1998

Interest Provision
 (in Dollars)

Line	October-97	November-97	December-97	January-98	February-98	March-98	End of Period Total
1 Beginning True-Up Amount (Form 42-2A, Line 7 + 7a + 10)	\$370,744	(\$43,867)	(\$72,525)	(\$11,642)	\$198,118	\$398,275	
2 Ending True-Up Amount Before Interest (Line 1 + Form 42-2A, Lines 5 + 6)	(43,823)	(72,259)	(11,443)	198,677	384,932	487,262	
3 Total of Beginning & Ending True-Up (Lines 1 + 2)	(114,357)	(116,143)	(6,868)	187,035	584,048	873,537	
4 Average True-Up Amount (Line 3 x 1/2)	(57,184)	(58,072)	(41,804)	93,516	292,024	436,768	
5 Interest Rate (First Day of Reporting Business Month)	5.53%	5.53%	5.60%	5.75%	5.50%	5.53%	
6 Interest Rate (First Day of Subsequent Business Month)	5.53%	5.60%	5.75%	5.50%	5.53%	5.55%	
7 Total of Beginning & Ending Interest Rates (Lines 5 + 6)	11.06%	11.13%	11.35%	11.25%	11.03%	11.08%	
8 Average Interest Rate (Line 7 x 1/2)	5.530%	5.565%	5.675%	5.625%	5.515%	5.540%	
9 Monthly Average Interest Rate (Line 8 x 1/2)	0.461%	0.464%	0.473%	0.468%	0.468%	0.462%	
10 Interest Provision for the Month (Line 4 x Line 9)	(\$264)	(\$268)	(\$188)	\$439	\$1,343	\$2,018	\$3,068

3

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Final True-Up Amount for the Period
October 1997 to March 1998

Variance Report of O&M Activities
 (in Dollars)

Line	(1)		(2)	(3)		(4)
	Actual	Estimated		Amount	Percent	
1	Description of O&M Activities					
	\$668,936	\$915,690	(\$246,754)	-27.0%		
	21,527	21,956	(429)	-2.0%		
	0	0	0	0.0%		
	0	0	0	0.0%		
	0	0	0	0.0%		
	0	0	0	0.0%		
	0	0	0	0.0%		
	1,841,160	1,960,956	(139,796)	-7.1%		
	(108,653)	(68,190)	(40,673)	59.7%		
2	\$2,422,760	\$2,650,412	(\$427,652)	-15.0%		
3	\$2,422,760					
4	\$0					

Notes:
 Column(1) is the End of Period Totals on Form 42-5A.
 Column(2) is the approved Estimated/Actual amount in accordance with
 FPSC Order No. PSC-99-0408-FOF-EI
 Column(3) = Column(1) - Column(2)
 Column(4) = Column(3) / Column(2)

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

O&M Activities
(in Dollars)

Line	October-97	November-97	December-97	January-98	February-98	March-98	End of Period Total
1 Description of O&M Activities							
1a Big Bend Unit 3 Flue Gas Desulfurization Integration	\$155,814	\$108,778	\$63,865	\$109,860	\$95,930	\$130,781	\$669,838
1b Big Bend Units 1 and 2 Flue Gas Conditioning	8,431	2,525	70	5,180	2,789	2,532	21,527
1c Big Bend Unit 4 Continuous Emissions Monitors	0	0	0	0	0	0	0
1d Cannon Ignition Oil Tank	0	0	0	0	0	0	0
1e Big Bend Fuel Oil Tank #1 Upgrade	0	0	0	0	0	0	0
1f Big Bend Fuel Oil Tank #2 Upgrade	0	0	0	0	0	0	0
1g Phillips Upgrade Tank #1 for FDEP	0	0	0	0	0	0	0
1h Phillips Upgrade Tank #4 for FDEP	0	0	0	0	0	0	0
1i SO2 Emissions Allowances	418,043	410,351	382,290	211,304	194,898	230,286	1,841,160
1j SO2 Credit - FMPA/LUD	(11,569)	(15,624)	(20,557)	(23,059)	(20,528)	(17,540)	(108,863)
2 Total Investment Projects - Recoverable Costs	568,522	504,028	425,898	303,394	263,079	358,069	2,422,780
3 Recoverable Costs Allocated to Energy	568,522	504,028	425,898	303,394	263,079	358,069	2,422,780
4 Recoverable Costs Allocated to Demand	0	0	0	0	0	0	0
5 Retail Energy Jurisdictional Factor	0.9296935	0.9274252	0.9102213	0.9272833	0.9254091	0.9429788	
6 Retail Demand Jurisdictional Factor	0.9029126	0.6910325	0.8929831	0.8883942	0.8899068	0.8948927	
7 Jurisdictional Energy Recoverable Costs (A)	528,551	467,446	387,452	281,328	243,459	337,851	2,245,864
7a Add back FMPA Excess Emissions Allocation	7,235	8,081	12,737	8,813	7,877	4,314	48,857
8 Jurisdictional Demand Recoverable Costs (B)	0	0	0	0	0	0	0
9 Total Jurisdictional Recoverable Costs for O&M Activities (Lines 7 + 8)	\$535,786	\$475,529	\$400,189	\$290,139	\$251,133	\$341,865	\$2,294,741

Notes:

- (A) Line 3 x Line 5
- (B) Line 4 x Line 6

Tampa Electric Company
 Environmental Cost Recovery Clause
 Calculation of the Final True-Up Amount for the Period
 October 1997 to March 1998

Variance Report of Capital Investment Projects - Recoverable Costs
 (in Dollars)

Line	Description of Investment Projects	(1)		(2)		(3)		(4)	
		Actual	Estimated	Actual	Estimated	Amount	Percent	Amount	Percent
1	Big Bend Unit 3 Flue Gas Desulfurization Integration	\$562,090	\$562,090	340,182	340,182	0	0.0%	0	0.0%
2	Big Bend Units 1 & 2 Flue Gas Conditioning	43,547	43,547	43,547	43,547	0	0.0%	0	0.0%
3	Big Bend Unit 4 Continuous Emissions Monitors	11,857	9,390	11,857	9,390	2,467	26.3%	2,467	26.3%
4	Gannon Ignition Oil Tank	2	411	2	411	(409)	-99.5%	(409)	-99.5%
5	Big Bend Fuel Oil Tank #1 Upgrade	2	454	2	454	(452)	-99.8%	(452)	-99.8%
6	Big Bend Fuel Oil Tank #2 Upgrade	0	28	0	28	(28)	-100.0%	(28)	-100.0%
7	Phillips Upgrade Tank #1 for FDEP	0	60	0	60	(60)	-100.0%	(60)	-100.0%
8	Phillips Upgrade Tank #4 for FDEP	0	60	0	60	(60)	-100.0%	(60)	-100.0%
2	Total Investment Projects - Recoverable Costs	\$957,690	\$956,172	\$957,690	\$956,172	\$1,518	0.2%	\$1,518	0.2%
3	Recoverable Costs Allocated to Energy	\$945,829		\$945,829					
4	Recoverable Costs Allocated to Demand	\$11,861		\$11,861					

Notes:

- Column(1) is the End of Period Totals on Form 42-7A.
- Column(2) is the approved Estimated/Actual amount in accordance with FPSC Order No. PSC-98-0408-FOF-EI
- Column(3) = Column(1) - Column(2)
- Column(4) = Column(3) / Column(2)

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

Capital Investment Projects-Recoverable Costs
(in Dollars)

Line	1 Description of Investment Projects (A)	October-97	November-97	December-97	January-98	February-98	March-98	End of Period Total
1a	Big Bend Unit 3 Flue Gas Desulfurization Integration	\$94,148	\$93,861	\$93,775	\$93,569	\$93,402	\$93,215	\$592,060
1b	Big Bend Units 1 and 2 Flue Gas Conditioning	57,029	58,897	58,785	58,633	58,500	58,368	340,182
1c	Big Bend Unit 4 Continuous Emissions Monitors	7,303	7,285	7,267	7,249	7,231	7,212	43,547
1d	Gannon Ignition Oil Tank	0	0	636	2,418	4,063	4,710	11,857
1e	Big Bend Fuel Oil Tank #1 Upgrade	0	0	0	0	0	2	2
1f	Big Bend Fuel Oil Tank #2 Upgrade	0	0	0	0	0	2	2
1g	Phillips Upgrade Tank #1 for FDEP	0	0	0	0	0	0	0
1h	Phillips Upgrade Tank #4 for FDEP	0	0	0	0	0	0	0
2	Total Investment Projects - Recoverable Costs	158,480	158,143	158,443	159,859	161,228	161,509	957,690
3	Recoverable Costs Allocated to Energy	158,480	158,143	157,807	157,471	157,133	156,795	945,829
4	Recoverable Costs Allocated to Demand	0	0	636	2,418	4,063	4,714	11,861
5	Retail Energy Jurisdictional Factor	0.8286835	0.8274252	0.8102213	0.8272633	0.8254091	0.8429768	
6	Retail Demand Jurisdictional Factor	0.9029128	0.8910325	0.8928831	0.8983642	0.8969068	0.8948927	
7	Jurisdictional Energy Recoverable Costs (B)	147,338	146,898	143,940	146,018	145,413	147,855	876,930
8	Jurisdictional Demand Recoverable Costs (C)	0	0	588	2,148	3,630	4,219	10,565
9	Total Jurisdictional Recoverable Costs for Investment Projects (Lines 7 + 8)	\$147,338	\$146,898	\$144,208	\$148,166	\$149,043	\$152,074	\$887,495

Notes:

- (A) Each project's Total System Recoverable Expenses on Form 42-8A, Line 9
- (B) Line 3 x Line 5
- (C) Line 4 x Line 6

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

Form 42-8A
Page 1 of 8

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 3 Flue Gas Desulfurization Integration
(in Dollars)

Line	Description	Beginning of							End of
		Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$0	
b.	Clearings to Plant		0	0	0	0	0	0	
c.	Retirements		0	0	0	0	0	0	
d.	Other		0	0	0	0	0	0	
2	Plant-in-Service/Depreciation Base	\$8,239,658	8,239,658	8,239,658	8,239,658	8,239,658	8,239,658	8,239,658	
3	Less: Accumulated Depreciation	(508,659)	(527,895)	(547,111)	(566,337)	(585,563)	(604,789)	(624,015)	
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	
5	Net Investment (Lines 2 + 3 + 4)	\$7,730,999	7,711,773	7,692,547	7,673,321	7,654,095	7,634,869	7,615,643	
6	Average Net Investment		7,721,390	7,702,160	7,682,834	7,663,708	7,644,482	7,625,256	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		56,777	56,635	56,494	56,353	56,211	56,070	\$338,540
b.	Debt Component (Line 6 x 2.82% x 1/12)		18,145	18,100	18,055	18,010	17,965	17,919	108,184
8	Investment Expenses								
a.	Depreciation		19,228	19,228	19,228	19,228	19,228	19,228	115,358
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		94,148	93,961	93,775	93,589	93,402	93,215	562,090
a.	Recoverable Costs Allocated to Energy		94,148	93,961	93,775	93,589	93,402	93,215	562,090
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9296935	0.9274252	0.9102213	0.9272633	0.9254091	0.9429788	
11	Demand Jurisdictional Factor		0.9029126	0.8910325	0.8928831	0.8853642	0.8869088	0.8948827	
12	Retail Energy-Related Recoverable Costs (B)		87,529	87,142	85,356	86,782	86,435	87,900	521,144
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$87,529	\$87,142	\$85,356	\$86,782	\$86,435	\$87,900	\$521,144

Notes:

- (A) Lines 6 x 8.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.57% (expansion factor of 1.628002)
(B) Line 9a x Line 10
(C) Line 9b x Line 11

EXHIBIT NO. _____
DOCKET NO. 980007-E1
TAMPA ELECTRIC COMPANY
(KOZ-1)
DOCUMENT NO. 8
PAGE 1 OF 8
FILED: MAY 19, 1998

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

Return on Capital Investments, Depreciation and Taxes
 For Project: Big Bend Units 1 and 2 Plus Gas Conditioning
 (in Dollars)

Line	Description	Beginning of Period Amount					End of Period Total
		October-97	November-97	December-97	January-98	February-98	
1	Investments						
a.	Expenditures/Additions	\$0	\$0	\$0	\$0	\$0	\$0
b.	Chargebacks to Plant	0	0	0	0	0	0
c.	Referrals	0	0	0	0	0	0
d.	Other	0	0	0	0	0	0
2	Plant-to-Serviced/Depreciation Base	\$5,017,734	5,017,734	5,017,734	5,017,734	5,017,734	5,017,734
3	Less: Accumulated Depreciation	(335,634)	(548,239)	(902,842)	(578,449)	(930,050)	(1,172,585)
4	OWIP - Non-Interest Bearing	0	0	0	0	0	0
5	Net Investment (Lines 2 + 3 + 4)	\$4,682,100	4,469,495	4,114,892	4,441,285	4,114,080	4,400,476
6	Average Net Investment	4,475,298	4,461,694	4,448,080	4,434,466	4,420,862	4,407,278
7	Return on Average Net Investment						
a.	Equity Component Grossed Up For Taxes (A)	32,908	32,808	32,708	32,808	32,507	32,407
b.	Debt Component (Line 6 x 2.82% x 1/12)	10,517	10,465	10,453	10,421	10,389	10,357
8	Investment Expenses						
a.	Depreciation	13,804	13,804	13,804	13,804	13,804	13,804
b.	Amortization	0	0	0	0	0	0
c.	Disarmament	0	0	0	0	0	0
d.	Property Taxes	0	0	0	0	0	0
e.	Other	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)	57,029	56,897	56,765	56,633	56,500	56,368
a.	Recoverable Costs Allocated to Energy	57,029	56,897	56,765	56,633	56,500	56,368
b.	Recoverable Costs Allocated to Demand	0	0	0	0	0	0
10	Energy Jurisdictional Factor	0.82988035	0.8274252	0.81022113	0.8072633	0.80284091	0.8428768
11	Demand Jurisdictional Factor	0.9028125	0.8910325	0.8978631	0.8883642	0.8800098	0.8948627
12	Retail Energy-Related Recoverable Costs (B)	53,019	52,766	51,869	51,514	52,286	53,154
13	Retail Demand-Related Recoverable Costs (C)	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)	\$53,019	\$52,766	\$51,869	\$52,514	\$52,286	\$53,154
							\$315,410

Notes:

(A) Line 6 x 8.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 36.575% (-) gaspation factor of 1.828002)

(B) Line 8a x Line 10

(C) Line 8b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
October 1997 to March 1998

Form 42-8A
Page 3 of 8

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Unit 4 Continuous Emissions Monitors
(in Dollars)

Line	Description	Beginning of						End of Period Total	
		Period Amount	October-97	November-97	December-97	January-98	February-98		March-98
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$0	
b.	Clearings to Plant		0	0	0	0	0	0	
c.	Retirements		0	0	0	0	0	0	
d.	Other		0	0	0	0	0	0	
2	Plant-in-Service/Depreciation Base	\$888,211	888,211	888,211	888,211	888,211	888,211	888,211	
3	Less: Accumulated Depreciation	(88,628)	(71,503)	(73,380)	(75,257)	(77,134)	(78,011)	(80,888)	
4	Other (A)	(238,408)	(238,408)	(238,408)	(238,408)	(238,408)	(238,408)	(238,408)	
5	Net Investment (Lines 2 + 3 + 4)	\$560,177	558,300	556,423	554,546	552,669	550,792	548,915	
6	Average Net Investment		558,238	557,362	555,485	553,608	551,731	549,854	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (B)		4,112	4,088	4,083	4,071	4,057	4,043	\$24,488
b.	Debt Component (Line 6 x 2.82% x 1/12)		1,314	1,310	1,305	1,301	1,297	1,292	7,819
8	Investment Expenses								
a.	Depreciation		1,877	1,877	1,877	1,877	1,877	1,877	11,282
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other (D)		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		7,303	7,285	7,267	7,249	7,231	7,212	43,547
a.	Recoverable Costs Allocated to Energy		7,303	7,285	7,267	7,249	7,231	7,212	43,547
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9298935	0.9274252	0.9102213	0.9272633	0.9254091	0.9428788	
11	Demand Jurisdictional Factor		0.9029128	0.8910325	0.8928831	0.8983642	0.8989068	0.8948827	
12	Retail Energy-Related Recoverable Costs (C)		6,790	6,756	6,615	6,722	6,892	6,801	40,376
13	Retail Demand-Related Recoverable Costs (D)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$6,790	\$6,756	\$6,615	\$6,722	\$6,892	\$6,801	\$40,376

Notes:

- (A) Represents the Net Book Value of the replaced Big Bend Unit 4 CEM; which is currently recovered through base rates.
(B) Lines 8 x 4.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.628002)
(C) Line 8a x Line 10
(D) Line 8b x Line 11

EXHIBIT NO. _____
DOCKET NO. 980007-EI
TAMPA ELECTRIC COMPANY
(KOZ-1)
DOCUMENT NO. 8
PAGE 3 OF 8
FILED: MAY 19, 1998

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Projected Period Amount
October 1997 to March 1998

Form 42-8A
Page 4 of 8

Return on Capital Investments, Depreciation and Taxes
For Project: Gannon Ignition Oil Tank
(in Dollars)

Line	Description	Beginning of							End of
		Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$207,038	\$77,935	\$82,874	\$15,075	
b.	Clearings to Plant		0	0	0	0	0	0	
c.	Retirements		0	0	0	0	0	0	
d.	Other		0	0	0	0	0	0	
2	Plant-in-Service/Depreciation Base	\$0	0	0	0	474,971	557,845	572,920	
3	Less: Accumulated Depreciation	0	0	0	0	(772)	(2,451)	(4,288)	
4	CWIP - Non-Interest Bearing	0			397,038	0	0	0	
4a	Other (A)	0	0	0	(286,000)	(286,000)	(286,000)	(286,000)	
5	Net Investment (Lines 2 + 3 + 4)	\$0	0	0	131,038	208,199	289,394	302,632	
6	Average Net Investment		0	0	85,518	169,618	248,797	298,013	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (B)		0	0	482	1,247	1,829	2,177	\$5,735
b.	Debt Component (Line 6 x 2.82% x 1/12)		0	0	154	399	585	698	1,834
8	Investment Expenses								
a.	Depreciation		0	0	0	772	1,879	1,837	4,288
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other (D)		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		0	0	636	2,418	4,093	4,710	11,857
a.	Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0
b.	Recoverable Costs Allocated to Demand		0	0	636	2,418	4,093	4,710	11,857
10	Energy Jurisdictional Factor		0.9298935	0.9274252	0.9102213	0.9272633	0.9254091	0.9429788	
11	Demand Jurisdictional Factor		0.9729128	0.8910325	0.8928831	0.8883842	0.8889068	0.8948927	
12	Retail Energy-Related Recoverable Costs (C)		0	0	0	0	0	0	0
13	Retail Demand-Related Recoverable Costs (D)		0	0	568	2,148	3,630	4,215	10,561
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$0	\$0	\$568	\$2,148	\$3,630	\$4,215	\$10,561

Notes:

- (A) Represents the Net Book Value of the replaced Gannon Ignition Oil Tank which is currently recovered through base rates.
(B) Lines 6 x 8.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.628002)
(C) Line 9a x Line 10
(D) Line 9b x Line 11

EXHIBIT NO. _____
DOCKET NO. 980067-EI
TAMPA ELECTRIC COMPANY
(KOZ-1)
DOCUMENT NO. 8
PAGE 4 OF 8
FILED: MAY 19, 1998

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

Form 42-8A
Page 5 of 8

Return on Capital Investments, Depreciation and Taxes
For Project: Big Bend Fuel Oil Tank #1 Upgrade
(in Dollars)

Line	Description	Beginning of	End of						
		Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$416	
b.	Clearings to Plant		0	0	0	0	0	0	
c.	Retirements		0	0	0	0	0	0	
d.	Other		0	0	0	0	0	0	
2	Plant-in-Service/Depreciation Base	\$0	0	0	0	0	0	0	
3	Less: Accumulated Depreciation	0	0	0	0	0	0	0	
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	416	
5	Net Investment (Lines 2 + 3 + 4)	\$0	0	0	0	0	0	416	
6	Average Net Investment		0	0	0	0	0	208	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		0	0	0	0	0	2	\$2
b.	Debt Component (Line 6 x 2.82% x 1/12)		0	0	0	0	0	0	0
8	Investment Expenses								
a.	Depreciation		0	0	0	0	0	0	0
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		0	0	0	0	0	2	2
a.	Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	2	2
10	Energy Jurisdictional Factor		0.9298935	0.9274252	0.9102213	0.9272633	0.9254081	0.9429788	
11	Demand Jurisdictional Factor		0.9029128	0.8910325	0.8928631	0.8983642	0.8889084	0.8948927	
12	Retail Energy-Related Recoverable Costs (B)		0	0	0	0	0	0	0
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	2	2
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$0	\$0	\$0	\$0	\$0	\$2	\$2

Notes:

- (A) Lines 6 x 8.6238% x 1/12. Based on ROE of 11.75% and weighted-income tax rate of 38.575% (expansion factor of 1.828002)
(B) Line 6a x Line 10
(C) Line 6b x Line 11

EXHIBIT NO. _____
DOCKET NO. 980007-EI
TAMPA ELECTRIC COMPANY
(KOZ-1)
DOCUMENT NO. 8
PAGE 5 OF 8
FILED: MAY 19, 1998

12

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998

Form 42-8A
Page 6 of 8

Return on Capital Investments, Depreciation and Taxes
 For Project: Big Bend Fuel Oil Tank #2 Upgrade
 (in Dollars)

Line	Description	Beginning of						End of	
		Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$416	\$416
b.	Clearings to Plant		0	0	0	0	0	0	0
c.	Retirements		0	0	0	0	0	0	0
d.	Other		0	0	0	0	0	0	0
2	Plant-in-Service/Depreciation Base	\$0	0	0	0	0	0	0	0
3	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	416	416
5	Net Investment (Lines 2 + 3 + 4)	\$0	0	0	0	0	0	416	416
6	Average Net Investment		0	0	0	0	0	208	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		0	0	0	0	0	2	\$2
b.	Debt Component (Line 6 x 2.82% x 1/12)		0	0	0	0	0	0	0
8	Investment Expenses								
a.	Depreciation		0	0	0	0	0	0	0
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		0	0	0	0	0	2	2
a.	Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	2	2
10	Energy Jurisdictional Factor		0.9298935	0.9274252	0.9102213	0.9272633	0.9254091	0.9429788	
11	Demand Jurisdictional Factor		0.9029126	0.8910325	0.8928831	0.8883642	0.8889068	0.8948927	
12	Retail Energy-Related Recoverable Costs (B)		0	0	0	0	0	0	0
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	2	2
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$0	\$0	\$0	\$0	\$0	\$2	\$2

Notes:

- (A) Lines 6 x 8.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.828002)
 (B) Line 9a x Line 10
 (C) Line 9b x Line 11

EXHIBIT NO. _____
 DOCKET NO. 980007-EI
 TAMPA ELECTRIC COMPANY
 (KOZ-1)
 DOCUMENT NO. 8
 PAGE 6 OF 8
 FILED: MAY 19, 1998

Tampa Electric Company
 Environmental Cost Recovery Clause (ECRC)
 Calculation of the Actual Period Amount
 October 1997 to March 1998
 Return on Capital Investments, Depreciation and Taxes
 For Project: Phillips Upgrade Tank #1
 (in Dollars)

Form 42-8A
 Page 7 of 8

Line	Description	Beginning of Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	End of Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$0	\$0
b.	Clearings to Plant		0	0	0	0	0	0	0
c.	Retirements		0	0	0	0	0	0	0
d.	Other		0	0	0	0	0	0	0
2	Plant-in-Service/Depreciation Base	\$0	0	0	0	0	0	0	0
3	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0
5	Net Investment (Lines 2 + 3 + 4)	\$0	0	0	0	0	0	0	0
6	Average Net Investment		0	0	0	0	0	0	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		0	0	0	0	0	0	\$0
b.	Debt Component (Line 6 x 2.82% x 1/12)		0	0	0	0	0	0	0
8	Investment Expenses								
a.	Depreciation		0	0	0	0	0	0	0
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		0	0	0	0	0	0	0
a.	Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9296935	0.9274252	0.9102213	0.9272633	0.9254091	0.9429788	
11	Demand Jurisdictional Factor		0.9029126	0.8910325	0.8928831	0.8883642	0.8869088	0.8948927	
12	Retail Energy-Related Recoverable Costs (B)		0	0	0	0	0	0	0
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes:

- (A) Lines 6 x 8.8236% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.028002)
 (B) Line 9a x Line 10
 (C) Line 9b x Line 11

EXHIBIT NO. _____
 DOCKET NO. 980007-EI
 TAMPA ELECTRIC COMPANY
 (K02-1)
 DOCUMENT NO. 8
 PAGE 7 OF 8
 FILED: MAY 19, 1998

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
October 1997 to March 1998
Return on Capital Investments, Depreciation and Taxes
For Project: Phillips Upgrade Tank #4
(In Dollars)

Form 42-8A
Page 8 of 8

Line	Description	Beginning of Period Amount	October-97	November-97	December-97	January-98	February-98	March-98	End of Period Total
1	Investments								
a.	Expenditures/Additions		\$0	\$0	\$0	\$0	\$0	\$0	\$0
b.	Clearings to Plant		0	0	0	0	0	0	0
c.	Retirements		0	0	0	0	0	0	0
d.	Other		0	0	0	0	0	0	0
2	Plant-in-Service/Depreciation Base	\$0	0	0	0	0	0	0	0
3	Less: Accumulated Depreciation	0	0	0	0	0	0	0	0
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0
5	Net Investment (Lines 2 + 3 + 4)	\$0	0	0	0	0	0	0	0
6	Average Net Investment		0	0	0	0	0	0	
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		0	0	0	0	0	0	\$0
b.	Debt Component (Line 6 x 2.82% x 1/12)		0	0	0	0	0	0	0
8	Investment Expenses								
a.	Depreciation		0	0	0	0	0	0	0
b.	Amortization		0	0	0	0	0	0	0
c.	Dismantlement		0	0	0	0	0	0	0
d.	Property Taxes		0	0	0	0	0	0	0
e.	Other		0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)		0	0	0	0	0	0	0
a.	Recoverable Costs Allocated to Energy		0	0	0	0	0	0	0
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9298835	0.9274252	0.9102213	0.9272633	0.9254091	0.9429788	
11	Demand Jurisdictional Factor		0.9029126	0.8910325	0.8928831	0.8883642	0.8889088	0.8948927	
12	Retail Energy-Related Recoverable Costs (B)		0	0	0	0	0	0	0
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes:

- (A) Lines 6 x 6.8233% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 36.575% (expansion factor of 1.828002)
(B) Line 8a x Line 10
(C) Line 8b x Line 11

EXHIBIT NO. _____
DOCKET NO. 980007-EI
TAMPA ELECTRIC COMPANY
(KOZ-1)
DOCUMENT NO. 8
PAGE 8 OF 8
FILED: MAY 19, 1998