AUSLEY & MCMULLEN

ATTORNEYS AND COUNSELORS A" LAW

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

November 17, 1997

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. 970007-EI

Dear Ms. Bayo:

Enclosed for filing in the above docket, on behalf of Tampa Electric Company, are ten (10) copies of Tampa Electric Company's Prepared Direct Testimony and Exhibit (KOZ-1) of Karen O. Zwolak regarding Environmental Cost Recovery final true-ups for the period April 1997 - September 1997.

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

R/ Llaracer with this matter.

Sincerely,

ames D. Beasley

JDB/pp Enclosures

ec All Parties of Record (w/enc.)

Jen Jen

1-1-765 NOV 175

Ms. Blanca S. Bayo November 17, 1997 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 $\underline{n^{\mu}}$ day of November, 1997 to the following:

Ms. Vicki D. Johnson* 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 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

In One -

TAMPA ELECTRIC COMPANY DOCKET NO. 970007-EI FILED: NOVEMBER 17, 1997

BEFORE THE

.

FLORIDA PUBLIC SERVICE COMMISSION

TAMPA ELECTRIC COMPANY

DOCKET NO. 970007-EI

ENVIRONMENTAL COST RECOVERY

FINAL TRUE-UPS

APRIL 1997 - SEPTEMBER 1997

TESTIMONY AND EXHIBIT OF

KAREN O. ZWOLAK

DOCTOR AND TO DATE 11765 NOV 175

TAMPA ELECTRIC COMPANY DOCKET NO. 970007-EI SUBMITTED FOR FILING 11/17/97

1		BEFORE THE PUBLIC SERVICE COMMISSION
2		PREPARED DIRECT TESTIMONY
3		OF
4		KAREN O. ZWOLAK
5		3.
6	Q.	Please state your name, address, occupation and employer.
7		
8	а.	My name is Karen O. Zwolak. My business address is 702
9		North Franklin Street, Tampa, Florida 33602. I am employed
10		by Tampa Electric Company in the position of Manager,
11		Energy Issues in the Electric Regulatory Affairs
12		Department.
13		
14	Q.	Please provide a brief outline of your educational
15		background and business experience
16		
17	A.	I received a Bachelor of Arts Degree in Microbiology in
18		1977 and a Bachelor of Science degree in Chemical
19		Engineering in 1985 from the University of South Florida.
20		I began my engineering career in 1986 at the Florida
21		Department of Environmental Regulation and was employed as
22		a Permitting Engineer in the Industrial Wastewater Program.
23		In 1990, I joined Tampa Electric Company as an engineer in
24		the Environmental Planning Department and was responsible
25		for permitting and compliance issues relating to wastewater

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l		treatment and disposal. In 1995, I transferred to Tampa
2		Electric's Energy Supply Department and assumed the duties
3		of the plant chemical engineer at the F. J. Gannon Station.
4		In this position, I was responsible for boiler chemistry,
5		water management, and maintenance of environmental
6		equipment and general engineering support. In 1997, I was
7		promoted to Manager, Energy Issues in the Electric
8		Regulatory Affairs Department. My present responsibilities
9		include the areas of fuel adjustment, capacity cost
10		recovery, environmental filings and rate design.
11		
12	۵.	What is the purpose of your testimony in this proceeding?
13		
14	А.	The purpose of my testimony is to present, for Commission
15		review and approval, the actual true-up amount and the
16		calculations thereof associated with the environmental
17		compliance activities for the period April 1997 through
18		September 1997.
19		
20	Q.	Do you wish to sponsor exhibits in support of your
21		testimony?
22		
23	A.	Yes. My Exhibit No(KOZ-1) consists of 8 documents
24		which were prepared under my direction and supervision.
25		Form 42-1A (Document No. 1) reflects the final true-up for

ï

1		the April 1997 - September 1997 period; Form 42-2A
2		(Document No. 2), consists of the final true-up calculation
3		for the period; Form 42-3A (Document No. 3), consists of
4		the calculation of the Interest Provision for the period;
5		Form 42-4A (Document No. 4), reflects the calculation of
6		variances between actual and projected costs for 0 & M $$
7		Activities; Form 42-5A (Document No. 5), presents a summary
8		of actual monthly costs for the period for O & M
9		Activities; Form 42-6A (Document No. 6), reflects the
10		calculation of variances between actual and projected costs
11		for Capital Investment Projects; Form 42-7A (Document No.
12		7), presents a summary of actual monthly costs for the
13		period for Capital Investment Projects and Form 42-8A
14		(Document No. 8), consists of the calculation of
15		depreciation expense and return on capital investment.
16		
17	۵.	What is the source of the data which you will present by
18		way of testimony or exhibits in this processing?
19		
20	А.	Unless otherwise indicated, the actual data is taken from
21		the books and records of Tampa Electric Company. The books
22		and records are kept in the regular course of our business
23		in accordance with generally accepted accounting principles
24		and practices, and provisions of the Uniform System of
25		Accounts as prescribed by this Commission.

l	Q.	Have the incremental costs for SO2 emission allowances
2		incurred by Tampa Electric's wholesale sales to the Florida
3		Municipal Power Agency (FMPA) and the City of Lakeland
4		(Lakeland) been identified and included in this true-up
5		filing?
6		
7	А.	Yes, they have. As per Commission Order No. PSC-97-1273-
8		FOF-EU, Docket No. 970171-EU, the incremental SO2
9		allowance costs incurred by the FMPA and Lakeland wholesale
10		sales have been identified and are included on line 10b of
11		Schedule 42-2A of this true-up filing.
12		
13	۵.	What are the incremental SO2 allowance costs of these two
14		wholesale sales and how are they being treated?
15		
16	А.	Tampa Electric has calculated the incremental SO2 allowance
17		costs incurred from making the FMPA and Lakeland wholesale
18		sales to be \$188,383 for the period December 1996 through
19		September 1997. This amount was then adjusted by \$29,013
20		to take into account the amount retail ratepayers were
21		being credited due to the FMPA and Lakeland wholesale sales
22		being included in the calculation of the jurisdictional
23		separation factor. A net amount of \$159,370 will be
24		credited to the retail ratepayers as shown on schedule 42-
25		2A, line 10b.

1	Q.	How were the costs calculated?
2		
3	А.	As shown in my Exhibit No (KOZ-1) (Document No. 9), the
4		tons of SO2 emissions caused by the additional generation
5		from Tampa Electric's system for the FMPA and Lakeland
6		wholesale sales for the period December 1996 through
7		September 1997 were calculated based on that percentage of
8		generation which served these sales. That percentage was
9		applied to the total tonnage of SO2 emitted by Tampa
10		Electric's system. The dollar per megawatt-hour (\$/Mwh)
11		, was determined by applying the monthly incremental cost of
12		an allowance to that portion of emissions calculated for
13		each sale.
14		
15	۵.	How was the adjusted amount of \$29,013 calculated?
16		
17	А.	The total monthly Mwh for the FMPA and Lakeland sales as a
18		percentage of total sales was determined. This percent was
19		applied to total monthly emission expense to determine the
20		amount of emission expense related to these sales.
21		
22	۵.	Is this method of calculation the same method that will be
23		used on a go-forward basis?
24		
25	λ.	No, it is not. In the future, Tampa Electric will use the

actual data for the incremental SO2 allowance cost captured 1 on an hourly basis for these sales. 2 3 Has Tampa Electric made the necessary adjustments to its' 4 Q. Environmental Cost Recovery Clause (ECRC) in order to 5 comply with Audit Disclosure No. 3 of the Florida Public 6 7 Service Commission's (FPSC) Environmental Compliance Cost 8 Adjustment Audit Report for the period ending March 31. 1997? 9 10 11 А. Yes. As per Commission Order No. PSC-97-1047-FOF-EJ, 12 Docket No. 970007-EI, Tampa Electric has agreed to remove associated with modifications 13 charges payroll and 14 expansions to employee workload due to the Big Bend Unit 3 Flue Gas Desulfurization Integration Project through the 15 ECRC. (See line 10a cf Schedule 42-2A). 16 17 What is the actual true-up amount which Tampa Electric is 18 Q. 19 requesting for the six-month period April 1997 through September 1997? 20 21 Tampa Electric has calculated and is requesting approval of 22 А. 23 an over/(under) - recovery of (\$230,720) as the actual 24 true-up amount for the six-month period. 25

1 the adjusted net true up amount which Tampa Q. What is 2 Electric is requesting for the April 1997 through September 3 1997 period which is to be carried over and refunded/ 4 recovered in the next projection period? 5 Tampa Electric has calculated and is requesting approval of 6 λ. 7 an over/(under) recovery of \$612,826 as the adjusted net 8 true-up amount for the six-month period. This adjusted net 9 true-up amount is the difference between the actual over/(under) recovery of (\$230,720) for the period April 10 1997 through September 1997 and the actual/estimated true-11 up for the same period of an over/(under) recovery of 12 13 (\$843,546) approved in FPSC Order No. PSC-97-1047-FOF-EI. This is shown on form 42-1A. 14 15 16 Q. Is this true-up calculation consistent with the true-up 17 methodology used for other cost recovery clauses? 18 Yes, it is. The calculation of the true-up amount follows 19 Α. 20 the procedures established by this Commission as set forth 21 on Commission Schedule A-2 "Calculation of True-Up and Interest Provisions' for the Fuel Cost Recovery Clause. 22 23 24 all listed 42-4A through Q. Are costs in Forms 42-8A 25 attributable to Environmental Compliance projects approved

1		by the Commission?
2		
3	А.	Yes, they are.
4		
5	۵.	How did actual expenditures for Apr_{p}^{i} 1 1997 through
6		September 1997 compare with Tampa Electric's
7		actual/estimated projections as presented in previous
8		testimony and exhibits?
9		
10	λ.	Overall costs were \$102,790 lower than actual/estimated
11		projections. The variance created by the removal of
12		payroll expenses from the ECRC for the Big Bend 3 FGD
13		system was offset by increased 0 & M expenses due to
14		unplanned outages and additional maintenance expense for
15		the Big Bend 3 FGD system.
16		
17	۵.	Does this conclude your testimony?
18		
19	А.	Yes, it does.
20		
21		
22		
23		
24		
25		

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EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1)

FINAL TRUE - UP

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ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS 42-1A THROUGH 42-8A

APRIL 1997 - SEPTEMBER 1997

EXHIBIT NO DOCKET NO 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1)

FINAL TRUE UP ENVIRONMENTAL COST RECOVERY COMMISSION FORMS 42-1A THROUGH 42-8A APRIL 1997 - SEPTEMBER 1997 INDEX

DOCUMENT NO.	TITLE	PAGE
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
9	SO2 Allowance Cost- FMPA/Lakeland	11

Tempa Electric Company Environmental Cost Recovery Clause (ECRC,

Form 42-1A

8	Partod	(027.0C23)	(34-5 CP-8)	\$612,526
Calculation of the Final True-Up Amount for the Period April 1997 to September 1997	Ĩ	 End of Period Actual True-Up for the Period April 1987 to September 1987 (Form 42-2A, Lines 5 + 6 +10a + 10b) 	 Estimated/Actual True-Up Amount approved for the Period April 1997 to September 1997 (Order No. PSC-87-1047-FOF-El) 	 Final True-Up Amount to be refunded/(recovered) in the projection period April 1998 to September 1998 (Unset 1 - 2)

e.

EXHIBIT NO._____ DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 1 PAGE 1 OF 1

Tampa Electric Company Environmental Cost Recovery Clause (CCRC) Calculation of the Final True-Up Amount for the Period April .397 to September 1997

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

Line April 1997 May 1997 July 1997 August 1997 September 1997 1 ECRC Revenues (net of Revenue Taxes) \$372,541 \$387,963 \$466,888 \$478,249 \$459,168 \$443,733 2 True-Up Provision (Order No. 97-2033-FOF-E) \$3372,541 \$337,963 \$466,888 \$478,249 \$459,168 \$443,733 3 ECRC Revenues Applicable to Period (Lines 1 + 2) \$32,669 \$47,481 417,006 438,367 419,288 443,849 4 Jurisdictional ECRC Costs a. 0.8.M Activities (form 42-5A, Line 9) 218,647 288,164 373,317 311,933 478,117 534,110 b. Capital Investment Projecta (Form 42-7A, Line 9) 218,647 288,164 373,317 311,933 478,117 534,110 c. Total Jurisdictional ECRC Costs 368,243 435,603 542,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,775) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,02	End of Period
2 True-Up Provision (Order No. 97-2093-FOF-EI) (39,882)	Total
2 True-Up Provision (Order No. 97-2093-FOF-EI) (39,882)	
2 True-Up Provision (Order No. 97-2093-FOF-EI) (39,882)	\$2,637,942
3 ECRC Revenues Applicable to Period (Lines 1 + 2) 332,659 347,481 417,006 438,367 419,286 443,849 4 Jurisdictional ECRC Costs a. O & M Activities (Form 42-5A, Line 9) 218,647 286,164 373,317 311,933 478,117 534,110 b. Capital Investment Projects (Form 42-7A, Line 9) 218,647 286,164 373,317 311,933 478,117 534,110 c. Total Jurisdictional ECRC Costs 368,243 435,693 522,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,776) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision (239,294) 63,331 15,916 (48,605) (27,161) (191,838) a. Deferred True-Up from October 1996 to March 1997 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 156,449 1	(239,294)
a. O & M Activities (Form 42-5A, Line 9) 218,647 286,164 373,317 311,933 478,117 534,110 b. Capital Investment Projects (Form 42-7A, Line 9) 149,596 149,529 148,746 145,424 145,945 147,990 c. Total Jurisdictional ECRC Costs 368,243 435,693 5/2,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,776) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision (239,294) 63,331 15,916 (48,605) (27,161) (191,838) a. Deferred True-Up from October 1996 to March 1997 156,449 <t< td=""><td>2,398,648</td></t<>	2,398,648
b. Capital Investment Projects (Form 42-7A, Line 9) 149,596 149,596 149,529 148,746 145,424 145,945 147,990 c. Total Jurisdictional ECRC Costs 368,243 435,693 522,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,776) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision a. Deferred True-Up from October 1996 to March 1997 (Order No. PSC-97-1047-FOF-EI) (239,294) 63,331 15,916 (48,605) (27,161) (191,838) 8 Text No. PSC-97-1047-FOF-EI) 156,449	
b. Capital Investment Projects (Form 42-7A, Line 9) 149,596 149,529 148,746 145,424 145,945 147,990 c. Total Jurisdictional ECRC Costs 368,243 435,693 522,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,776) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision (239,294) 63,331 15,916 (48,605) (27,161) (191,838) a. Deferred True-Up from October 1996 to March 1997 156,449 156,	2,202,268
c. Total Jurisdictional ECRC Costa 368,243 435,693 522,063 457,357 624,062 682,100 5 Over/Under Recovery (Line 3 - Line 4c) (35,584) (88,212) (105,057) (18,990) (204,776) (238,251) 6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision (239,294) 63,331 15,916 (48,605) (27,161) (191,838) N a. Deferred True-Up from October 1996 to March 1997 156,449 156	887,230
6 Interest Provision (Form 42-3A, Line 10) 1,025 915 654 552 217 115 7 Beginning Balance True-Up & Interest Provision a. Deferred True-Up from October 1996 to March 1997 (Order No. PSC-97-1047-FOF-EI) (239,294) 63,331 15,916 (48,605) (27,161) (191,838)	3,089,513
7 Beginning Balance True-Up & Interest Provision (239,294) 63,331 15,916 (48,605) (27,161) (191,838) N a. Deferred True-Up from October 1996 to March 1997 (Order No. PSC-97-1047-FOF-EI) 156,449 156,44	(690,870)
a. Deferred True-Up from October 1996 to March 1997 (Order No. PSC-97-1047-FOF-EI) 156,449 <t< td=""><td>3,478</td></t<>	3,478
(Order No. PSC-97-1047-FOF-EI) 156,449 156,449 156,449 156,449 156,449 156,449	(239,294)
8 True-Up Collected/(Refunded) (see Line 2) 39,882 39,882 39,882 39,882 39,882 39,882 39,884	156,449
	239,294
9 End of Period Total True-Up (Lines 5+6+7+7a+8) (77,522) 172,365 107,844 129,288 (35,389) (233,641)	(530,943)
10 Adjustments to Period Total True-Up	
a. Payroll Adjustment due to Audit 297,302 0 0 0 0 0 0	297,302
b. SO2 Credit Differential - FMPA/Lakeland (12/96 - 9/97) 0 0 0 0 159,370	159,370
11 End of Period Total True-Up (Lines 9 + 10a + 10b) \$219,780 \$172,365 \$107,844 \$129,268 (\$35,389) (\$74,271)	(\$74,271)

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 2 PAGE 1 OF 1

Form 42-2A

 \mathbf{v}_{i}

	Tampa Electric Company Environmental Cost Recovery Clause (ECRC) Calculation of the FinelTine-Up Amount for the Period Arplil 1997 to September 1997	11 as (ECRC) t for the Period 1987						Form Q.3A
	Interest Provision (in Dollars)							
	Ĩ	April 1987	May 1987	June 1987	7881 Yur	August 1997	August 1997 September 1967	End of Period Total
	 Begirring True-Up Amount (Form 42-2A, Line 7 + 7a + 10a + 10b) 	\$214,457	\$219,780	\$177,365	\$107,844	\$129,288	196, 1218	
	Ending True-Up Amount Batore Interest (Line 1 + Form 42-2A, Lines 5 + 8)	218,755	171,450	107,190	128,736	(35,609)	(74,266)	
	3 Total of Beginning & Ending True-Up (Lines 1 + 2)	21202	391,230	279,555	236,560	239'03	49 595	
	4 Average True-Up Amount (Line 3 x 1/2)	216,606	185,615	139,778	118,290	45,841	24,798	
	5 travest Rate (First Day of Reporting Business Month)	5.74%	5.62%	5.80%	5.62%	5.58%	\$50M	
	6 Interest Rate (First Day of Subsequent Business Month)	5.62%	5.60%	¥-25%	5.58%	5.56%	8-52-W	
	7 Total of Beginning & Enring Interest Rates (Lines 5 + 6)	89211	\$127.11	11 22%	11.20%	11.14%	11.09%	
	3 Average interest Rais (Line 7 \times 1/2)	5.600%	5.610%	5.610%	5.600%	\$570%	5.545%	
	9 Monthly Average Interest Rate (Line 5 x 1/12)	%CUY0	9,469%	0.458%	0.467%	0.464%	%-299° 0	
**	10 Internet Provision for the Month (Line 4 x Line 3)	\$1,025	\$915	\$654	\$552	217	\$115	80%

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 3 PAGE 1 OF 1

I ampa Electric Company Environmental Cost Recovery Clause (ECRC) Culculation of the FinelTrue-Up Annount for the Period April 1997 to September 1997

Verlance Report of O&M Activities (in Dollars)

	ε	8	6	4
		Actual	Variance	80
Line	Actual	Estimated	Amount	Percent
1 Description of O&M Activities				
1 Big Bend Unit 3 Flue Gas Desulturtzation Integration	\$694,508	\$771,1778	(\$77,190)	10.01-
Big Band Units 1 & 2 Plue Gea Conditioning	11,664	26,806	(15,144)	-06.5%
3. Big Bend Unit 4 Continuous Emissions Monitors	0	0	0	100
4. SO2 Emissions Allowamose	1,672,863	611 029 1	(10,456)	190
2 Total Oth Activities	\$12,578,515	\$2,481,705	(\$102,790)	A.1%
3 Recoverable Costs Allocated to Energy 4 Recoverable Costs Allocated to Demand	219,872,52 08			

Notes:

Column(1) is the End of Period Tostals on Form 42-54 Column(2) is the approved Estimated/Actual emount in accordance with FPSC Order N.a. PSC-87-1047-FOF-EI Column(3) = Column(1) - Column(2) Column(4) = Column(3) / Column(2)

4

Form 42-4A

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 4 PAGE 1 OF 1

	I Jernpa Electric Company Environmental Coat Recovery Clause (ECRC) Cerbastion of the Actual Period Amount April 1977 to Septembur 1997	use (ECRC) 4 Amount 1967					Form 42-5A
	O&M Activities (in Dolians)	viber L					
Line	April 1997	May 1997	June 1997	7861 Ann	August 1987	August 1987 Saptember 1987	End of Period Tobel
 Description of O&M Activities Tage Bend Unit 3 False Gais Desurfuritation Integration 	1952518	\$45,598	120,0213	118,103	\$109,150	\$182,317	8094,500
1b Big Bend Units 1 and 2 Plue Ges Conditioning	3,407	2,907	9	2,663	2,612		11,064
1c Bg Band Unit 4 Continuous Errissions Monitors	0	•	0	0	0	•	0
1d SO2 Allowances	98,637	206,011	268,014	202,500	409,629	900,000	1 672 663
Total Investment Projects - Recoverable Costs	234,565	306,516	401,128	342,107	521,301	573,168	2,378,915
3 Recoverable Costs Allocated to Energy	595'HCZ	306,516	401,128	101.045	LET 155	577,168	218,872,2
4 Recoverable Costs Allocated to Dernand	0	0	0	0	0	0	0
5 Retail Energy Jurisdictional Fector 6 Retail Demand Jurisdictional Factor	D BTCTOSE4	0.5336034 N/A	0.9206675 NA	0.9117969 N/A	0.9170034 N/A	0.9018225 MA	
7 Jurtadictional Energy Recoverable Costs (A) 8 Jurtadictional Derrand Recoverable Costs (B)	218,647	206,164	715,572 0	0	478,117	534,110 0	2,202,268 0
7 B Total Jurisdictional Recoverable Costs for Other Activities (Lines: 7 + 8)	\$218,647	\$206,164	116,8788	005/1103	\$478,117	\$534,110	\$2,202,268
Notes.							

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 5 PAGE 1 OF 1

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 \mathbf{t}

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

Taimos Electric Company Environmental Cost Recovery Clause Calculation of the Final True-Up Amount for the Period April 1997 to September 1997

Variance Report of Capital Invesument Projects - Recoverable Costs

(in Dollars)

	(;)	6	6	(9)
Lha	Actual	Estimated	Arrount	Percent
 Description of Investment Projects Big Band Unit 3 Fau Gas Desulfurtzation Integration 	\$558,804	100,865,804	3	100
2 Big Bend Units 1 & 2 Flue Gas Conditioning	344,946	344,945	•	0.0%
3. Big Bend Unit 4 Continuous Erriseions Monitors	44,203	44,203	0	W00
2 Total Investment Projects - Recoverable Costs	\$967,963	1987, 963	8	160.0
 Recoverable Ceets Allocated to Energy Recoverable Ceets Allocated to Demand 	\$207,953 \$0			

B Notes

Column(1) is the End of Pariod Totals on Form 42-7A Column(2) is the appreved Estimated/Actual amount in accordance with FPEC Order No. PSC-87-1047-FOF-E1 Column(3) = Column(1) - Column(2) Column(4) = Column(2)

Form 42-6A

EXHIBIT NO.____ DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 6 PAGE 1 OF 1

. .

1		April 1437 to September 1997						
1		Ceptal Investment Projects-Recoverable Costs (in Dollars)	rabia Costa					
								End of Period
	1	April 1997	May 1997	June 1997	1581 Kmr	August 1997	August 1997 September 1997	Total
	1 Everyption of Investment Phojects (A)							
	1a Big Bend Unit 3 Pue Ges Desufurization Integration	192,362	\$95,080	A90, 1094	\$94,708	122, MUS	104,334	\$568,804
	1b Big Bend Units 1 and 2 Pue Ges Conditioning	120725	57,589	57,567	529/15	57,293	57,161	344,948
	1c Big Bend Unit 4 Continuous Emissions Mentions	7,413	7,394	7,376	7,358	7,340		44,200
	2 Total Investment Projects - Recoverable Cests	160,501	160,163	159,827	159,401	159,154	-	852, 953
	3 Recon weble Costs Allocated to Energy	160,501	160,163	158,827	159,491	159,154	158,817	100 100
	4 Recoverable Costs Allocated to Demand	0	•	0	0	0	0	0
	5 Retail Energy Jurtadictional Factor	0.8320584	0.90208034	\$1390055.0	0.9117909	0.9170034	0.5318235	
	6. Retail Demand Jurisdictional Factor	NA	NVA	NIA	NA	MM	MIA	
	7 Jurisdictional Energy Recoverable Costs (B)	149,596	149,529	148,746	145,024	145,945	147,980	0027 738
	5 Jurisdictional Demand Recoverable Costs (C)	0	0	0	0	0	0	0
7	9 Total Articlictional Recoverable Costs for Investment Projects (Lines 7 + 6)	\$149,596	872, 61 (S	\$148.748	\$145,424	\$145,945	\$147,990	002,7368

Notes:

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

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 7 PAGE 1 OF 1

Form 42-7A

Tampa Electric Company

Environ	Tampa Electric Company Environmental Cost Recovery Clause (ECRC) Catcutation of the Actual Period Amount April 1997 to September 1997	MDBITY Clause (ECRC) whod Amount ther 1997			TAMPA ELECTRUC (KOZ-1) DOCUMENT NO 8 PAGE 1 OF 3	TAMPA ELECTRUC COMPANY (KOZ-1) DOCUMENT NO 8 PAGE 1 OF 3	PANY	Form 42-3A Page 1 of 3
Return on C For Project Big	Return on Capital Investments, Depreciation and Taxes For Project: Big Band Unit 3 Flue Gas Desuituritation Integration (in Dollars)	preciation and Te Desuthurtzation In	noite gradion					
Lina Description	Beginning of Period Amount	April 1997	May 1997	June 1997	7961 APY	August 1997	September 1997	Ered of Period Total
1 Enverantaria Expenditures/Additiona		3	3	3	8	8	3	
b Clearings to Plant		0	0	0	0	0	0	
c. Retirements		0	0	0	0	0	c	
d Other		0	0	0	0	0	0	
2 Plant-in-Service/Depreciation Buse	859'652'8\$	8,239,658	820,922,8	8,239,652,8	8,239,656	10	828,822,8	
 Less: Accumulated Depreciation 4 CWIP - Non-Interest Beamfrag 	(00°,08C) 0	(412,529)	(SSL/109)	(450,961)	(470,207)	0	(508,559)	
5 Net Investment (Lines 2 + 3 + 4)	\$7,846,355	7,827,129	7,807,903	7,768,577	7,769,451	7,750,225	666'0CL'L	
6. Average Net kneedmant		7,836,742	7,817,516	7,798,290	1719,064	7,758,838	7,740,512	
 Return on Average Not Investment Enuity Component Genaged Up For Taxes (N) 		57,625	57,483	57.342	57 201	27 059	56.918	ELO ELO
00 b. Debt Component (Line 6 x 2.62% x 1/12)		18,416	142,81	18,326	18,281	18,236	18,190	108,820
8 Investment Expenses								
a. Deprecision		DJT AL	077'81	ary'at	077 AL	977'R1	077'81	B07'C11
D. Principalitation			0 0					
d Proverty Texas		0	0	0	0	0 0		
a. Other	2.	0	0	0	0	0	0	
9 Total System Recoverable Expenses (Lines 7 + 8)		197 98	88,080	94,094	84,708			100,000
 Recoverable Costs Ascaled to Energy Recoverable Costs Ascaled to Demand 		0	nan'on	Networks	.0 .0	125,48	90, 90	D See and
10 Energy Juritadictional Factor 11 Dernand Jurisdictional Factor		0.9320584 N/A	N/A	0.93066/75 N/A	0.9117909 N/A	0.9170034 NuA	0.9316235 N/A	
12 Rated Energy-Rolated Recoverable Costs (B)		88,794	792,093	68,215	96,355	873,88	87.903	526.810
13 Retail Demand-Related Recoverable Costs (C)		0	0	0	0			
14 Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$08.79M	197.862	C681 315	200 165	SHA RUR	567 GT3	SC28 B10

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Notee: (A) Lines 6 x 8.8236% x 1/12. Based on ROE of 11.75% and weighted income tex rate of 38.575% (expension factor of 1.629002) (B) Line 6e x Line 10 (C) Line 8b x Line 11

Ap.	Termon Electric Company Environmental Cost Recovery Clause (ECRC) Catodiation of the Actual Period Amount April 1997 to September 1997	Cleure (ECRC) riod Amount ber 1997			TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 8 PAGE 2 OF 3	r NO. 8		Form 42-8A Page 2 of 3
Return on Cap For Project Big	Return on Capital Invesuments, Depreciation and Taxe a For Project: Big Band Units 1 and 2 Fue Gas Conditioning (in Dollars)	preciation and Ta Plue Gas Condition	ore a oning					
Une Description	Beginning of Period Amount	April 1987	Mary 1997	June 1987	1861 APP	August 1997 S	September 1997	End of Parted Total
1 hrveuthmentia a. Excenditurea/Additions		8	3	ទ	ş	ş	ş	
b. Clearings to Plant		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 3 Leas: Accumulated Depreciation	\$5,017,734 (454,010)	8,017,734 (467,614)	5,017,734 (481,218)	5,017,734 (484,822)	5,017,734 (508,426)	NCT, T10, 2	ACT. THE 2 (POD. 302)	
4 CWIP - Non-trainest Bearing 5 Net Investment (Lines 2 + 3 + 4)	\$4,563,724	4,560,120	4,536,516	4,522,912	4,508,305	4,495,704	4,482,100	
6 Average Net Investment		4,556,922	4,543,318	4,529,714	4,516,110	4,502,506	4,488,902	
 Return on Average Net Ervestment Equity Component Grossed Up For Taxes (A) 		805,55	809'02	805,55	302,02	30,105	900'CZ	\$199.545
b. Debt Component (Line 5 x 2.62% x 1/12)		10,708	10,677	10,645	10,613	10,581	015.04	63,774
8 Invel-trant Expenses a. Depreciation		10,00	13,604	100/01	13,804	13,804	MUNCT	1004
b. Arrortization		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
1. CONF		0	P	•	0	•	0	0
9 Total System Recoverable Expenses (Lines 7 + 6)		57,821	57,638	57,567	521/125	57,293	57,161	344.945
a. Recoverable Cests Allocated to Energy		57,821	57,659	57,557	150/15	57,293	57,161	344,945
b. Recoverable Costs Allocated to Demand		0	0	0	0	0	•	0
10 Envergy Jurisdictional Factor		0.9320584	0.8338034	0.8006675	1006/1150	0.9170034	0.231823	
11 Demand Juriedictional Factor		MA	NIA	MA	MIN	MA	NUA	
12 Retail Energy-Related Recoverable Costs (B) 13 Dates Downord-Balance Recoverable Costs (D)		000/05	53,858	53,568	092,22	52,538	10,23	319,480
14 Total Juriadictional Recoverable Costs (Lines 12 + 13)		000/1555	\$53.059	\$53,566	\$52,360	\$52.538	253 264	0 113

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(A) Lines 6 x 8.6239% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.628002)
 (B) Line 8a x Line 10
 (C) Line 8b x Line 11

Forn 42-8.4		End of Peerlod Total											7.978		11,262	0	0	0	0	44,203	44,203	0			0940/09	0	nur'nue
		September 1997		05	0 0	00	806,211	(923,68)	1008 (8CZ)	2001177	561,116		4,128		1,877	0	•	0	•	7,222	7,322	0	0.8318235	MUA	6,823	0	170/ne
EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ-1) DOCUMENT NO. 8 PAGE 3 OF 3		August 1987 54		8	0 0	0	866,211	(87.749)	[00] (00]	200,000	262,983		1,202		1,877	0	•	0	0	7,340	7,340	0	0.9170034	NIA	6,731	162 201	101/06
EXHIBIT NO DOCKET NO 97000 TAMPA ELECTRIC (KOZ-1) DOCUMENT NO 8 PAGE 3 OF 3		1861 Anr		8	0 0	0	868,211	(278,877)	(ana ac7)	105/000	564,870		1271		1,877	0	0	0	0	1,358	7,358	0	0.9117909	NIA	6,708	0 000	201700
		June 1997		9	0 0		866,211	(000,000)	(00% 0C7)	900'00C	566,747	1	1.100		1,877	0	•	0	0	812.1	7,378	0	5/29068/0	NIA	6,865	D Star Aug	aning
1	ration	Mary 1987		8	00	0	866,211	(62,118)	100x 007	000/100	508,624		101.4		178,1	0	0	0	0	ज़्र	1,204	0	10303604	NIA	6,903	and and	andres
IDERTY Clauren (ECRC) ber 1997 precietion and Ta	ous Emissions Mk	April 1997		8	0 0		866,211	(50,241)	Carls Barls	700,800	570,501		17		1,877	0	0	0	0	7,413	7,413	0	0.9320584	NUA	6,900	Set series	
Tempe Electric Company Environmental Cost Recovery Clause (ECRC) Calculation of the Actual Period Amount April 1997 to September 1997 Return on Capital Investments, Depreciation and Taxes	For Project: Big Bend Four Continuous Ernissions Montor (in Dollans)	Beginning of Period Amount					\$866,211	(58,364)	100% 0C71	ACY LICE									1							1	
Erver Ca	For Project	a Description	1 krvestirtartis	a. Expenditures/Additions	b. Cleanings to Plant c. Resteaments.	d. Other	2 Plant-In-Service/Depreciation Base	3 Less: Accumulated Depreciation	5. Mod browshround () loose 2 + 3 + 4)	(* + C + 7 start) Humanssans I and C	6 Average Net Investment	7 Return on Average Net Investment	b. Datit Component unused up not i asses (b) b. Datit Component (Line 6 x 2.82% x 1/12)	10	a. Depreciation	b. Arnortization	c. Dismantlement	d. Property Taxes	e. Other (D)	9 Total System Recoverable Expenses (Lines 7 + 8)	a. Recoverable Costs Allocated to Energy	b. Recoverable Costs Allocated to Demand	10 Energy Jurtsdictional Factor	11 Demand Juriadictional Factor	12 Retail Energy-Related Recoverable Costs (C)	 Keana Lierrans-Keanad Recoveracie Costs (U) Tetel Juriadictional Recoverable Costs (Lines 12 + 13) 	
		Line											1	.0													

Notes: (A) Represents the Net Book Value of the replaced Big Band Unit 4 CEMs which is currently recovered through base rates. (B) Lines 6 x 8.8.238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.628002) (C) Line 6a x Line 10 (D) Line 8b x Line 11

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ - 1) DOCUMENT NO. 9 PAGE 1 OF 3

SYSTEM S02 EMISSIONS FOR FMPA (DECEMBER 1996 THROUGH SEPTEMBER 1997)

	SYSTEM :	SO2 EMISS	SIONS	FMPA A	LLOCATION	COSTS FOR	SO2 EMISSI	ON ALLOW	ANCES
MONTH	BB2 SO2 EMISSIONS (TONS)	BB3 SO2 EMISSIONS (TONS)	GANS & GAN6 SO2 EMISSIONS (TONS) *	EMISSION ALLOCATION FOR FMPA (BB2)	EMISSION ALLOCATION FOR FMPA (BB3)	EMISSION ALLOCATION FOR FMPA (GANS & GAN6)	TOTAL MONTHLY 582 EMISSIONS FOR FMPA (TONS)	ALLOWANCE COST (S/TON)	ALLOWANCE COST FOR FMPA (\$/MWH)
Dec-96	1,791	369	0	56	6	0	62	\$91.50	\$5,673.00
Jan-97	3,519	1,389	0	147	53	0	200	\$90.50	\$18,100.00
Feb-97	3,102	1,770	o	123	87	0	210	\$97.00	\$20,370.00
Mar-97	4,175	936	0	101	27	0	128	\$104.00	\$13,312.00
Apr-97	4,221	890	0	102	20	0	122	\$112.50	\$13,725.00
May-97	3,925	1,474	0	100	37	0	137	\$114.00	\$15,618.00
Jun-97	3,629	843	0	219	47	0	266	\$96.00	\$25,536.00
Jul-97	4,212	139	0	227	43	0	270	\$89.50	\$24,165.00
Aug-97	3,791	1,073	0	225	58	0	. 283	\$89.75	\$25,399.25
Sep-97	3,847	603	0	207	48	0	¥ 255	\$90.31	\$23,029.05
TOTAL	36,212	9,486	0	1,507	426	0	1,933		\$184,922.40

* OANNON UNITS NOT AFFECTED BY PHASE I COMPLAINCE; NO S02 EMISSION ALLOWANCES APPLY.

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ- 1) DOCUMENT 9 PAGE 2 OF 3

SO2 ALLOWANCE COST FOR LAKELAND (DECEMBER, 1996 THROUGH SEPTEMBER, 1997)

	A	B	С	D	Z	F	G
монти	TOTAL SYSTEM GENERATION (MWH)	LAKELAND MONTHLY GENERATION (MWH)	LAKELAND % OF TOTAL SYSTEM GENERATION	TOTAL EMISSIONS BB STATION (TONS)	TOTAL EMISSIONS FROM LAKELAND (TONS) (C x D)	ALLOWANCE COST (S/TON)	ALLOWANCE COST FOR LAKELAND (\$/TON) (E x F)
Dec-96	1,389,062	500	0.04%	6,938	2.50	\$91.50	\$228.51
Jan-97	1,615,185	540	0.03%	8,430	2.82	\$90.50	\$255.06
Feb-97	1,313,551	240	0.02%	8,254	1.51	\$97.00	\$146.29
Mar-97	1,362,250	0	0.00%	8,400	0.00	\$104.00	\$0.00
Apr-97	1,364,202	0	0.00%	5,684	0.00	\$112.50	\$0.00
May-97	1,556,151	0	0.00%	7,287	0.00	\$114.00	\$0.00
Jun-97	1,522,350	1,020	0.07%	9,380	6.28	\$96.00	\$603.34
Jul-97	1,538,501	2,000	0.13%	9,485	12.33	\$89.50	\$1,103.55
Aug-97	1,423,578	830	0.06%	9,361	5.46	\$89.75	\$489.84
Sep-97	1,589,249	1,290	0.08%	8,704	7.07	\$90.31	\$638.05
TOTAL	14,674,079	6,420		81,923	37.96		\$3,464.63

EXHIBIT NO. DOCKET NO. 970007-EI TAMPA ELECTRIC COMPANY (KOZ- 1) DOCUMENT 9 PAGE 3 OF 3

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SO2 ALLOWANCE COST FOR FMPA / LAKELAND (DECEMBER, 1996 THROUGH SEPTEMBER, 1997)

MONTH	FMPA	LAKELAND	TOTAL
Dec-96	\$5,658.00	\$228.51	
Jan-97	\$18,127.68	\$255.06	
Feb-97	\$20,407.71	\$146.29	
Mar-97	\$13,292.55	\$0.00	
Apr-97	\$13,785.29	\$0.00	
May-97	\$15,655.21	\$0.00	
Jun-97	\$25,477.92	\$603.34	
Jul-97	\$24,127.69	\$1,103.55	
Aug-97	\$25,356.41	\$489.84	
Sep-97	\$23,029.70	\$638.05	
SUBTOTAL	\$184,918.16	\$3,464.64	\$188,382.80
Adjusted to account for separation factor			(\$29,013.00
TOTAL			\$159,369.80