

ORIGINAL

TAMPA ELECTRIC COMPANY
DOCKET NO. 970007-EI
FILED: NOVEMBER 17, 1997
REVISED: DECEMBER 16, 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

DOCUMENT NUMBER DATE

12830 DEC 17 97

FOSC-RECORDS/REPORTING

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

13

14 A. 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 9 documents
24 which were prepared under my direction and supervision.
25 Form 42-1A (Document No. 1) reflects the final true-up for

- 1 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 A. 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 Q. What are the incremental SO2 allowance costs of these two
14 wholesale sales and how are they being treated?
15
- 16 A. Tampa Electric has calculated the incremental SO2 allowance
17 costs incurred from making the FMPA and Lakeland wholesale
18 sales to be \$189,442 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 \$160,429 will be
24 credited to the retail ratepayers as shown on schedule 42-
25 2A, line 10b.

1 actual data for the incremental SO2 allowance cost captured
2 on an hourly basis for these sales.

3

4 Q. Has Tampa Electric made the necessary adjustments to its'
5 Environmental Cost Recovery Clause (ECRC) in order to
6 comply with Audit Disclosure No. 3 of the Florida Public
7 Service Commission's (FPSC) Environmental Compliance Cost
8 Adjustment Audit Report for the period ending March 31,
9 1997?

10

11 A. Yes. As per Commission Order No. PSC-97-1047-POF-EI,
12 Docket No. 970007-EI, Tampa Electric has agreed to remove
13 payroll charges associated with modifications and
14 expansions to employee workload due to the Big Bend Unit 3
15 Flue Gas Desulfurization Integration Project through the
16 ECRC. (See line 10a of Schedule 42-2A).

17

18 Q. What is the actual true-up amount which Tampa Electric is
19 requesting for the six-month period April 1997 through
20 September 1997?

21

22 A. Tampa Electric has calculated and is requesting approval of
23 an over/(under) - recovery of (\$229,657) as the actual
24 true-up amount for the six-month period.

25

- 1 Q. What is the adjusted net true-up amount which Tampa
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
- 6 A. Tampa Electric has calculated and is requesting approval of
7 an over/(under) recovery of \$613,889 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
10 over/(under) recovery of (\$229,657) for the period April
11 1997 through September 1997 and the actual/estimated true-
12 up for the same period of an over/(under) recovery of
13 (\$843,546) approved in FPSC Order No. PSC-97-1047-FOF-EI.
14 This is shown on form 42-1A.
15
- 16 Q. Is this true-up calculation consistent with the true-up
17 methodology used for other cost recovery clauses?
18
- 19 A. Yes, it is. The calculation of the true-up amount follows
20 the procedures established by this Commission as set forth
21 on Commission Schedule A-2 "Calculation of True-Up and
22 Interest Provisions" for the Fuel Cost Recovery Clause.
23
- 24 Q. Are all costs listed in Forms 42-4A through 42-8A
25 attributable to Environmental Compliance projects approved

EXHIBIT NO. _____
DOCKET NO. 970007-EI
TAMPA ELECTRIC COMPANY
(KOZ-1)
REVISED: DECEMBER 16, 1997

FINAL TRUE - UP

ENVIRONMENTAL COST RECOVERY

COMMISSION FORMS 42-1A THROUGH 42-8A

APRIL 1997 - SEPTEMBER 1997

Tampa 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 Unit 3 Flue Gas Desulfurization Integration
(in Dollars)

Line	Description	Beginning of Period Amount	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997	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.	Refinements		0	0	0	0	0	0	0
d.	Other		0	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	8,239,658
3	Loss: Accumulated Depreciation	(583,303)	(412,529)	(431,755)	(450,881)	(470,207)	(488,433)	(508,659)	(508,659)
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	0
5	Net Investment (Lines 2 + 3 + 4)	\$7,656,355	7,827,129	7,807,903	7,788,777	7,769,451	7,750,225	7,730,999	7,730,999
6	Average Net Investment		7,838,742	7,817,516	7,798,290	7,779,064	7,759,838	7,740,612	7,740,612
7	Return on Average Net Investment								
a.	Equity Component Grossed Up For Taxes (A)		57,625	57,463	57,342	57,201	57,059	56,918	56,918
b.	Debt Component (Line 6 x 2.82% x 1/12)		18,416	18,371	18,326	18,281	18,236	18,190	18,190
8	Investment Expenses								
a.	Depreciation		19,226	19,226	19,226	19,226	19,226	19,226	115,356
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)		95,267	95,060	94,894	94,708	94,521	94,334	568,604
a.	Recoverable Costs Allocated to Energy		95,267	95,060	94,894	94,708	94,521	94,334	568,604
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9320584	0.9336034	0.9356675	0.9117669	0.9170034	0.9318235	
11	Demand Jurisdictional Factor		N/A	N/A	N/A	N/A	N/A	N/A	
12	Retail Energy-Related Recoverable Costs (B)		89,794	88,767	88,315	86,355	86,678	87,903	526,810
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$89,794	\$88,767	\$88,315	\$86,355	\$86,678	\$87,903	\$526,810

Notes:
(A) Line 6 x 8.0238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.628002)
(B) Line 9a x Line 10
(C) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
April 1987 to September 1987

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	April 1987	May 1987	June 1987	July 1987	August 1987	September 1987	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	\$5,017,734	5,017,734	5,017,734	5,017,734	5,017,734	5,017,734	5,017,734	
3	Less: Accumulated Depreciation	(654,010)	(667,814)	(681,218)	(694,622)	(708,026)	(721,430)	(734,834)	
4	CWIP - Non-Interest Bearing	0	0	0	0	0	0	0	
5	Net Investment (Lines 2 + 3 + 4)	\$4,583,724	4,550,120	4,538,516	4,522,812	4,509,708	4,496,304	4,482,900	
6	Average Net Investment		4,558,822	4,543,318	4,528,714	4,514,110	4,502,508	4,488,802	
7 Return on Average Net Investment									
a.	Equity Component Grossed Up For Taxes (A)		33,508	33,408	33,308	33,208	33,108	33,008	\$180,548
b.	Debt Component (Line 6 x 2.82% x 1/12)		10,708	10,677	10,645	10,613	10,581	10,549	63,774
8	Investment Expenses		13,804	13,804	13,804	13,804	13,804	13,804	81,824
a.	Depreciation		0	0	0	0	0	0	0
b.	Amortization		0	0	0	0	0	0	0
c.	Disarmament		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)		57,821	57,689	57,557	57,425	57,293	57,161	344,948
a.	Recoverable Costs Allocated to Energy		57,821	57,689	57,557	57,425	57,293	57,161	344,948
b.	Recoverable Costs Allocated to Demand		0	0	0	0	0	0	0
10	Energy Jurisdictional Factor		0.9320584	0.9336034	0.9351484	0.9366934	0.9382384	0.9397834	
11	Demand Jurisdictional Factor		N/A	N/A	N/A	N/A	N/A	N/A	
12	Retail Energy-Related Recoverable Costs (B)		53,883	53,859	53,835	53,811	53,787	53,763	319,480
13	Retail Demand-Related Recoverable Costs (C)		0	0	0	0	0	0	0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)		\$53,883	\$53,859	\$53,835	\$53,811	\$53,787	\$53,763	\$319,480

Notes:

- (A) Line 6 x 0.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 36.575% (expansion factor of 1.628002)
- (B) Line 9a x Line 10
- (C) Line 9b x Line 11

Tampa Electric Company
Environmental Cost Recovery Clause (ECRC)
Calculation of the Actual Period Amount
April 1997 to September 1997

Form 42-6A
 Page 3 of 3

Return on Capital Investments, Depreciation and Taxes
 For Project: Big Bend Four Continuous Emissions Monitor
 (in Dollars)

Line	Description	Beginning of Period Amount									End of Period Total	
		April 1997	May 1997	June 97	July 1997	August 1997	September 1997					
1	Investments											
a.	Expenditures/Additions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
b.	Chargebacks to Plant	0	0	0	0	0	0	0	0	0	0	
c.	Retirements	0	0	0	0	0	0	0	0	0	0	
d.	Other	0	0	0	0	0	0	0	0	0	0	
2	Plant-to-Service/Depreciation Base	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	\$608,211	
3	Less: Accumulated Depreciation	(92,284)	(92,284)	(92,116)	(93,863)	(95,872)	(97,749)	(99,829)	(102,029)	(104,289)	(106,609)	
4	Other (A)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	(238,409)	
5	Net Investment (Lines 2 + 3 + 4)	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	\$277,528	
6	Average Net Investment	\$70,501	\$69,824	\$69,747	\$69,870	\$69,883	\$69,883	\$69,883	\$69,883	\$69,883	\$69,883	
7	Return on Average Net Investment											
a.	Equity Component Grossed Up For Taxes (B)	4,185	4,181	4,187	4,154	4,140	4,126	4,126	4,126	4,126	4,126	\$24,883
b.	Debt Component (Line 6 x 2.82% x 1/12)	1,241	1,238	1,232	1,237	1,223	1,219	1,219	1,219	1,219	1,219	7,878
8	Investment Expenses											
a.	Depreciation	1,877	1,877	1,877	1,877	1,877	1,877	1,877	1,877	1,877	1,877	11,262
b.	Amortization	0	0	0	0	0	0	0	0	0	0	0
c.	Disarmament	0	0	0	0	0	0	0	0	0	0	0
d.	Privately Taxes	0	0	0	0	0	0	0	0	0	0	0
e.	Other (D)	0	0	0	0	0	0	0	0	0	0	0
9	Total System Recoverable Expenses (Lines 7 + 8)	7,413	7,294	7,278	7,268	7,240	7,222	7,222	7,222	7,222	7,222	44,283
a.	Recoverable Costs Allocated to Energy	7,413	7,294	7,278	7,268	7,240	7,222	7,222	7,222	7,222	7,222	44,283
b.	Recoverable Costs Allocated to Demand	0	0	0	0	0	0	0	0	0	0	0
10	Energy Jurisdictional Factor	0.92320594	0.92338034	0.92306875	0.91178289	0.9170034	0.9318225					
11	Demand Jurisdictional Factor	N/A	N/A	N/A	N/A	N/A	N/A					
12	Retail Energy-Related Recoverable Costs (C)	8,908	8,803	8,865	8,789	8,731	8,523					49,940
13	Retail Demand-Related Recoverable Costs (D)	0	0	0	0	0	0					0
14	Total Jurisdictional Recoverable Costs (Lines 12 + 13)	\$8,908	\$8,803	\$8,865	\$8,789	\$8,731	\$8,523					\$49,940

Notes:
 (A) Represents the Net Book Value of the replaced Big Bend Unit 4 CEUs which is currently recovered through base rates.
 (B) Lines 6 + 8.8238% x 1/12. Based on ROE of 11.75% and weighted income tax rate of 38.575% (expansion factor of 1.8280027)
 (C) Line 5a x Line 10
 (D) Line 5b x Line 11

FMPA % GENERATION
(MWH AS PER FUEL FILINGS, DECEMBER 1996 THROUGH SEPTEMBER 1997)

MONTH	A	B	C	D	E	F	G	H	I	J	H
	BB2 MWH	BB3 MWH	GANS MWH	GAN6 MWH	FMPA MWH	FMPA GENERATION SERVED BY BB1, BB2, GNS, GN6 (E/A)	% BB2 GENERATION FMPA (F/A)	% BB3 GENERATION FMPA (F/B)	% GANS GENERATION FMPA (F/C)	% GAN6 GENERATION FMPA (F/D)	BB2 % GEN ALLOCATION (BB2/(BB1+BB2))
Dec-96	106,896	222,939	65,299	192,472	13,437	3,359.25	3.14%	1.51%	5.14%	1.75%	30.29%
Jan-97	244,470	267,798	121,801	184,579	40,918	10,229.50	4.18%	3.82%	8.40%	5.54%	56.46%
Feb-97	232,244	188,050	50,405	193,654	36,960	9,240.00	3.98%	4.91%	18.33%	4.77%	51.95%
Mar-97	269,722	225,319	95,927	85,990	26,642	6,510.50	2.41%	2.89%	6.79%	7.57%	62.53%
Apr-97	259,711	275,846	96,362	213,432	25,165	6,291.25	2.42%	2.28%	6.53%	2.95%	100.00%
May-97	254,295	260,405	128,601	210,030	26,040	6,510.00	2.56%	2.50%	5.06%	3.10%	75.02%
Jun-97	209,102	227,167	106,720	177,591	50,397	12,599.25	6.03%	5.55%	11.81%	7.09%	47.25%
Jul-97	242,013	42,085	112,418	194,318	52,080	13,020.00	5.38%	30.94%	11.58%	6.70%	48.39%
Aug-97	241,780	164,222	101,086	199,725	52,080	13,020.00	5.39%	7.93%	12.88%	6.52%	50.81%
Sep-97	212,636	233,583	94,497	168,884	50,400	12,600.00	5.93%	5.39%	13.33%	7.46%	48.82%

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

	A	B	C	D	E	F	G
MONTH	BB1/BB2 EMISSION AVERAGES * TONS	EMISSION ALLOCATION FOR BB2 TONS (BB2 % GEN x A)	EMISSION ALLOCATION FOR BB3 TONS	EMISSION ALLOCATION FOR FMPA (BB2) (BB2% GEN x B)	EMISSION ALLOCATION FOR FMPA (BB3) (BB3% GEN x C)	ALLOWANCE COST (\$/TON)	ALLOWANCE COST FOR FMPA TOTAL COST (D + E) x F
Dec-96	5,912	1,791	369	56	6	\$91.50	\$5,654.82
Jan-97	6,233	3,519	1,389	147	53	\$90.50	\$18,114.51
Feb-97	5,971	3,102	1,770	123	87	\$97.00	\$20,405.31
Mar-97	6,676	4,175	936	101	27	\$104.00	\$13,276.22
Apr-97	4,221	4,221	890	102	20	\$112.50	\$13,773.16
May-97	5,232	3,925	1,474	100	37	\$114.00	\$15,655.76
Jun-97	7,680	3,629	843	219	47	\$96.00	\$25,497.90
Jul-97	8,704	4,212	139	227	43	\$89.50	\$24,129.64
Aug-97	7,766	3,946	1,073	213	85	\$89.75	\$26,725.14
Sep-97	7,572	3,697	603	219	33	\$90.31	\$22,732.21
TOTAL	65,967	36,215	9,486	1,507	437		\$185,964.66

* NUMBER OF ALLOWANCES CONSUMED

SO2 ALLOWANCE COST FOR LAKELAND

(DECEMBER, 1996 THROUGH SEPTEMBER, 1997)

	A	B	C	D	E	F	G
MONTH	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 (\$/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	\$145.29
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	1,589,249	1,290	0.08%	9,361	7.60	\$89.75	\$681.95
Sep-97	1,423,578	830	0.06%	8,704	5.07	\$90.31	\$458.30
TOTAL	14,674,079	6,420		81,923	38.11		\$3,477.00

13

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

MONTH	FMPA	LAKELAND	TOTAL
Dec-96	\$5,654.82	\$228.51	
Jan-97	\$18,114.51	\$255.06	
Feb-97	\$20,405.31	\$146.29	
Mar-97	\$13,276.22	\$0.00	
Apr-97	\$13,773.16	\$0.00	
May-97	\$15,655.76	\$0.00	
Jun-97	\$25,497.90	\$603.34	
Jul-97	\$24,129.64	\$1,103.55	
Aug-97	\$26,725.14	\$681.95	
Sep-97	\$22,732.21	\$458.30	
SUBTOTAL	\$185,964.66	\$3,477.00	\$189,441.66
Adjusted to account for separation factor			(\$29,013.00)
TOTAL			\$160,428.66

DERIVATION OF FMPA / LAK SO2 SEPARATION ADJUSTMENT

Line		Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Total
1	FMPA / LAK MWH	(1) 25,165	26,040	26,220	28,040	27,170	26,030	
2	Loss Expansion Factor for Wholesale Sales	1.0158795	1.0158795	1.0158795	1.0158795	1.0158795	1.0158795	
3	Adjusted MWH for FMPA/LAK	(2) 25,565	26,454	26,636	28,485	27,601	26,443	
4	Total Retail Sales (MWH)	(3) 1,139,13	1,179,102	1,388,824	1,453,055	1,395,479	1,469,990	
5	Loss Expansion Adjustment for Retail Sales	146,009	149,625	181,175	223,546	205,550	189,702	
6	Adjusted MWH for Retail Sales	(4) 1,279,922	1,328,727	1,569,999	1,676,601	1,601,029	1,659,692	
7	FMPA / LAK MWh % Total Sales	(5) 0.0199736	0.0199089	0.0169658	0.0169899	0.0172398	0.0159327	
8	Total Emissions \$s	(6) \$98,637	\$208,011	\$268,014	\$307,533	\$409,629	\$380,839	
9	Excess Allocation	\$1,970	\$4,141	\$4,547	\$5,225	\$7,062	\$6,068	\$29,013

15

- Notes:
- (1) Fuel Filing, Schedule A6
 - (2) Line 1 x Line 2
 - (3) Fuel Filing, Schedule A1
 - (4) Line 4 + Line 5
 - (5) Line 3 / Line 6
 - (6) Environmental True-Up Filing (11/17/97)