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FILE COPY

February 3, 1995

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

RE: DOCKET NO. 950001-EI

Dear Ms. Bayo:

Enclosed for filing please find an original and fifteen (15) copies of Florida Power & Light Company's Rebuttal Testimony of Messrs. R. Silva and B.T. Birkett.

Very truly yours,

Matthew M. Childs, P.A.

ACK
AFA
APP
CAF
CMU
CTR
EAG Dudley 5
LEG 1
LIN 4
OPC
RCH
SEC 1
WAS
OTH

MMC/ml

cc: All Parties of Record

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DOCUMENT NUMBER-DATE
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Birkett

DOCUMENT NUMBER-DATE
01288 FEB-3 95
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CERTIFICATE OF SERVICE
DOCKET NO. 950001-EI

I HEREBY CERTIFY that a true and correct copy of Florida Power & Light Company's Rebuttal Testimony of Messrs. R. Silva and B.T. Birkett, have been furnished by Hand Delivery** or U.S. Mail this 3rd day of February, 1995, to the following:

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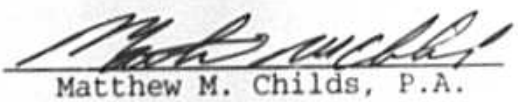

Matthew M. Childs, P.A.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

REBUTTAL TESTIMONY OF RENE SILVA

DOCKET NO. 950001-EI

February 3, 1995

Q Please state your name and address.

A. My name is Rene Silva. My business address is 9250 W. Flagler Street, Miami, Florida 33174.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company (FPL) as Manager of Forecasting and Regulatory Response in the Power Generation Business Unit.

Q. Have you previously testified in this docket?

A. Yes.

Q. What is the purpose of your testimony?

A. My rebuttal testimony rebuts the direct testimony of Witness Steven M. Fletek, filed on behalf of Florida Steel Corporation. Specifically, my testimony will address the concerns that Mr. Fletek expressed regarding FPL's projected cost of natural gas for the April through

September 1995 period. My testimony shows that Witness Fietek's conclusion that FPL's projected fuel cost is excessive is invalid, that his methodology is flawed, and that he fails to recognize the difference between the price of gas supply ($/MMBTU) that FPL purchases, and the cost of gas generation ($/MWH) that FPL incurs in generating electricity using gas as a fuel.

Q. On page 5, lines 14-16 of his testimony, Witness Fietek states that FPL's natural gas cost projection for the April through September 1995 period "is overstated by at least $65.5 million." Do you agree?

A. No. FPL's projected cost of natural gas generation for the April through September 1995 Fuel Cost Recovery period (projected period) is based on FPL's November 1994 gas price forecast for the projected period, which reflects then current gas market conditions and perceptions, as well as the cost of gas transportation to FPL, gas supply contract pricing terms, the quantity of gas expected to be used in FPL's system, the efficiency in heat rate (BTU/KWH) with which gas is used in each of FPL's generating units, FPL's projected load requirements and the cost and availability of other sources of energy during the projected period. FPL's projected cost is correct and appropriate for use in the Fuel Cost Recovery Clause for the projected period.

Witness Fietek has calculated his $65.5 million figure by inappropriately applying FPL's updated average unit cost of gas generation (in $/MWH) for the October 1994 through March 1995 period (current period) to FPL's projected gas generation (in MWH) during the projected period and subtracting that product, without explaining why its use is justified, from FPL's projected cost of gas generation for the projected period. Witness Fietek inexplicably refers to this difference as FPL's excessive cost.

Q. Why is Witness Fietek's methodology inappropriate?

A. Because it (1) arbitrarily, and without any justification, assumes that the current period gas generation cost estimate (in $/MWH) should be used as the projected fuel cost estimate (in $/MWH) for a future period, and in so doing, (2) fails to recognize a number of significant factual (and one projected) differences between the projected period and the current period that affect FPL's cost of gas generation.

Witness Fietek's methodology erroneously equates FPL's cost of electric generation using gas (in $/MWH), which I refer to as gas generation, to the price of gas in the market (in $/MMBTU), thus ignoring other determinants of the cost of gas generation. In addition, he assumes erroneously that the price of gas in the market will not change between the current period ending in March 1995, and the

projected period. Therefore, for these reasons, his results are invalid.

Q. What are the key differences between the current period, ending March 1995 and the projected period that affect the cost of gas generation?

A. There are four significant differences between the projected period and the current period that are correctly reflected in FPL's projected cost of gas generation for the projected period, and which witness Fietek fails to consider.

First, the average heat rate of gas generation during the projected period is approximately 9.87% higher than for the current period. This means that, on average, it will take 9.87% more gas to generate a megawatt-hour (MWH) in the projected period. Had Witness Fietek reflected this heat rate difference (that we know will occur) in his calculation, his $65.5 million would have been reduced to $43.6 million.

Second, FPL's average firm gas transportation rate will increase by approximately 12.8% from the current period, ending March 1995, to the projected period because FPL will receive, beginning in March 1995, 200,000 MMBTU per day of additional gas transportation from the higher-tariff FTS-2 firm service associated with Florida Gas

Transmission's Phase III pipeline capacity expansion. Had Witness Fietek also reflected this known increase in the gas transportation cost in his calculation, his result would have been further reduced to $35.5 million.

Third, during the projected period, FPL will receive approximately $1.0 million in credits from its gas supplier, compared to about $12.4 million of credits for the current period ending March 1995. These credits were obtained by FPL for its customers as part of the negotiated agreement, concluded in May 1994, to replace prior gas supply contracts with a new long-term contract. Had Witness Fietek's calculation also reflected this known reduction in credits, his result would have been further reduced to less than $14 million.

Fourth, we project that, on average, FPL's gas supply price will be $0.10/MMBTU higher during the projected period than for the current period, ending March 1995. Witness Fietek assumes that the gas market price will not change. Applying FPL's projected gas supply price increase to Witness Fietek's calculations further reduces his result to about $3.3 million, or less than 1.2% of FPL's total projected cost of gas.

It should be noted that the only determinant of the cost of gas

generation ($/MWH) discussed in Witness Fietek's testimony is the market price of natural gas ($/MMBTU). My testimony shows that his implied gas price position (no change from the current period), with which we disagree, accounts for less than $14 million.

Q. **Why is the average heat rate of gas generation higher in the projected period?**

A. Because as the quantity of natural gas used in FPL's generation system increases, more gas is allocated to generating units that utilize gas less efficiently. During the projected period, gas generation is projected to be approximately 13.6 million MWH; this is 5.4 million MWH or 65.7% more than the 8.2 million MWH (Rebuttal Document No.1, line 14, column H (RS-4)) for the current period, ending March 1995. FPL dispatches its most efficient units first, so the additional gas generation is provided by less efficient units. As a result, the average heat rate for gas generation in the projected period is 8,527 BTU/KWH; this is 766 BTU/KWH, or 9.87% higher than the 7,761 BTU/KWH (Rebuttal Document No.1, line 72, column H (RS-4)) for the current period, ending March, 1995.

Q. **How would you calculate the impact of heat rate that witness Fietek's calculation failed to reflect?**

A. As I have stated above, Witness Fietek's proposed methodology is

invalid. Therefore, I have performed different calculations in order to quantify the magnitude of the error in Witness Fletek's calculation due to each of the four differences described above.

Multiplying the $/MMBTU average cost of gas in the current period ending March 1995, shown in Document No.1, line 62, column H ($2.1057/MMBTU) by the total MMBTU used in the projected period (115,917,400 MMBTU), and then subtracting that product ($244,087,269) from FPL's total projected cost of gas for the projected period ($287,711,489) results in $43,624,220, instead of Witness Fletek's $65,533,519. The difference between these figures is the heat rate effect.

Q. **Please explain why the gas transportation cost will be higher in the projected period.**

A. During the current period ending March 1995, FPL is transporting approximately 51.2 million MMBTU of gas at $0.54/MMBTU, the tariff approved by the Federal Energy Regulatory Commission (FERC) for FTS-1 (existing firm gas transportation service provided by Florida Gas Transmission (FGT) to FPL and other Florida customers), including compressor fuel charges. FPL is also transporting about 6.2 million MMBTU of gas at $0.86/MMBTU, the tariff approved by FERC for FTS-2 (new firm gas transportation service scheduled to begin on

Q. What is the effect of the reduction in credits that Witness Fletek's calculation failed to reflect?

A. Approximately $21.5 million. During the current period, ending March, 1995, the $12.4 million in credits are divided by the 63,680,761 MMBTU of gas FPL is purchasing. This credit amount reduces FPL's unit cost of gas by $0.1943/MMBTU, and thus contributes to the lower ($2.1057/MMBTU) cost of gas during the current period. For the projected period, the $1.0 million in credits, divided by the 115,917,400 MMBTU of gas FPL projects to purchase, will reduce FPL's cost of gas by only $0.0088/MMBTU. The difference, $0.1855/MMBTU, multiplied by the 115,917,400 MMBTU of gas FPL will purchase in the projected period results in $21,502,678. This is the amount that Witness Fletek's calculation failed to reflect. This effect of known reduced credits should be subtracted from the $35,481,120 shown previously to reduce the figure to $13,978,442.

Q. Please explain how FPL's projected difference in the gas supply price affects the cost of gas generation in the projected period.

A. The weighted average cost of gas supply (for that portion of the gas delivered through firm transportation) during the projected period is $1.86/MMBTU, or $0.10/MMBTU higher than for the current period (Rebuttal Document No.2 (RS-5)). This price increase reflects our view that greater gas market demand in August and September will push

gas supply prices to the higher levels that existed in the first quarter of 1994. Multiplying the $0.10/MMBTU projected price difference between the projected period and the current period ending March 1995, by the quantity of gas delivered under firm transportation in the projected period (110,790,000 MMBTU) results in $10,637,271. This is the effect of the difference in FPL's projected price of gas supply between the two periods. Witness Fietek's methodology erroneously implies that this effect is $65.5 million.

If this $10,637,271 is subtracted from the $13,978,442 shown above, only $3,341,171 remains. This difference relates to changes in the cost of interruptible gas transportation and the cost of gas supply delivered through interruptible transportation.

Q. How will FPL reflect changes in gas market conditions on its projected cost of fuel?

A. We will continue to monitor and evaluate gas market developments, as well as changes in other fuels. Prior to the Prehearing Conference, we will determine whether changes in fuel market conditions (for gas and other energy sources) suggest that a change in the overall projected cost of fuel for the projected period is appropriate and, if so, we will propose a change at that time. Mr Birkett's Rebuttal Testimony also discusses, the process and procedures used to address the

effects of changing fuel prices in the Fuel Cost Recovery Clause.

Q. **On page 6, lines 9-14 of his testimony, Witness Fletek states: "FPL did not recognize the lower actual average cost of natural gas when it projected its natural gas cost for the period April 1995 through September 1995 but instead continued to use its higher original estimate for October 1994 through March 1995 as the starting point for projecting its future gas costs." Do you agree?**

A. No. This is incorrect. The average gas supply price projected in FPL's price projection prepared in May, 1994 for the October, 1994 through March, 1995 period was $2.29/MMBTU. In November, 1994, the average projected gas supply price for the October, 1994 through March, 1995 period was reduced to $1.76/MMBTU, and a new gas price projection was developed, recognizing the reduced cost of gas, for the April through September 1995 period which resulted in an average gas supply price of 1.86/MMBTU (Rebuttal Document No. 2 (RS-5)). This November price projection is the one used in FPL's Fuel Cost Recovery filing of January 1995.

Q. **On page 7, lines 14-17 of his testimony, Witness Fletek recommends that the Commission reduce FPL's projected fuel cost by $65.5 million. Do you agree?**

A. No. Witness Fletek's testimony uses a flawed calculation in an attempt

to support his conclusion that FPL used an excessively high price of gas supply in its calculation of the projected fuel cost for the April through September 1995 period. Moreover, in reaching his conclusion, Witness Fietek fails to recognize the difference between FPL's price of gas supply and its cost of electric generation using gas. As a result, although his testimony is intended as a criticism of FPL's gas price projection, it does not accomplish that objective because it criticizes a gas price projection that does not exist.

The calculation that resulted in Witness Fietek's $65.5 million figure is invalid because, as demonstrated in my testimony, it fails to reflect a number of significant known facts that affect the cost of gas generation, and his arbitrary assumption that current period costs should be used to estimate the cost for a future period has no justification. In addition, it would not be appropriate to adjust the total projected fuel cost for the projected period based solely on the perceived variation in a single fuel, without considering the effect of changes in prices of other fuels. Therefore his recommendation is without merit and should be rejected.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

COMPANY: FLORIDA POWER & LIGHT COMPANY
GENERATING SYSTEM COMPARATIVE DATA BY FUEL TYPE
ESTIMATED/ACTUAL FOR THE PERIOD OF OCTOBER 1994 - MARCH 1995
PER SCHEDULE A-3 FOR OCTOBER & NOVEMBER 1994 AND REVISED SCHEDULED E-3 FOR DECEMBER 1994 THROUGH MARCH 1995

LINE NO.	(A) FUEL COST OF SYSTEM NET GENERATION ($)	(B) ACTUAL OCT 94	(C) ACTUAL NOV 94	(D) RE-ESTIMATED DEC 94	(E) RE-ESTIMATED JAN 95	(F) RE-ESTIMATED FEB 95	(G) RE-ESTIMATED MAR 95	(H) 6-MONTHS TOTAL
1	HEAVY OIL	48,136,940	41,495,380	29,206,256	24,658,260	25,155,538	17,620,329	186,274,703
2	LIGHT OIL	127,337	11,571	323,392	16,843	333,214	547	812,904
3	COAL	7,653,561	7,766,035	8,259,822	8,441,068	3,240,550	5,809,249	41,170,305
4	GAS	17,059,772	21,896,630	21,778,412	20,322,914	19,660,713	33,371,518	134,090,159
5	NUCLEAR	8,826,487	6,239,963	7,309,417	9,720,852	8,787,852	9,705,863	50,590,274
6	ORIMULSION	0	0	0	0	0	0	0
7								
8	TOTAL ($)	81,806,097	77,409,799	66,877,299	63,159,757	57,177,867	66,507,525	412,938,344
9								
10	SYSTEM NET GENERATION (MWH)							
11	HEAVY OIL	2,101,162	1,760,776	1,345,459	1,161,126	1,236,223	903,273	8,508,019
12	LIGHT OIL	8,412	232	10,795	307	11,905	8	28,659
13	COAL	434,886	469,823	476,412	508,954	204,589	349,613	2,442,277
14	GAS	1,318,162	1,469,822	1,230,854	1,257,406	1,156,955	1,751,850	8,204,749
15	NUCLEAR	1,800,228	1,210,182	1,514,196	2,096,533	1,895,449	2,095,330	10,413,920
16	ORIMULSION	0	0	0	0	0	0	0
17								
18	TOTAL (MWH)	5,457,850	4,930,535	4,577,718	5,024,328	4,805,121	5,100,074	29,595,624
19								
20	UNITS OF FUEL BURNED							
21	HEAVY OIL (Bbl)	3,290,581	2,765,662	2,021,815	1,718,498	1,823,731	1,330,880	12,950,147
22	LIGHT OIL (Bbl)	4,885	472	13,549	617	15,079	19	34,621
23	COAL (TON)	232,401	142,528	227,933	239,451	88,214	167,107	1,195,629
24	GAS (MCF)	10,216,825	12,162,848	9,128,428	9,315,563	8,638,389	14,200,908	63,660,761
25	NUCLEAR (MMBTU)	17,683,667	13,344,127	16,814,855	22,296,845	20,140,712	22,264,847	112,346,453
26	ORIMULSION (TON)	0	0	0	0	0	0	0
27								
28								
29	BTU BURNED (MMBTU)							
30	HEAVY OIL	20,841,729	17,559,273	12,910,318	10,921,518	11,605,547	8,471,390	82,319,775
31	LIGHT OIL	27,876	2,750	77,121	3,009	85,072	112	195,740
32	COAL	4,291,474	4,596,981	4,693,546	4,927,619	1,949,346	3,467,517	23,926,483
33	GAS	10,216,825	12,162,848	9,128,428	9,315,563	8,638,389	14,200,908	63,660,761
34	NUCLEAR	17,683,667	13,344,127	16,814,855	22,296,845	20,140,712	22,264,847	112,346,453
35	ORIMULSION	0	0	0	0	0	0	0
36								
37	TOTAL (MMBTU)	53,061,171	47,665,979	43,424,068	47,466,354	42,417,066	48,404,574	282,469,212
38								

RS-4
Rebuttal Document No. 1
Docket No. 950001-EI
FPL Witness: R. Silva
Exhibit No. ____
Page 1 of 2
February 9, 1995

COMPANY: FLORIDA POWER & LIGHT COMPANY
GENERATING SYSTEM COMPARATIVE DATA BY FUEL TYPE
ESTIMATED/ACTUAL FOR THE PERIOD OF OCTOBER 1994 - MARCH 1995
PER SCHEDULE A-3 FOR OCTOBER & NOVEMBER 1994 AND REVISED SCHEDULED E-3 FOR DECEMBER 1994 THROUGH MARCH 1995

LINE NO.	(A)	(B) ACTUAL OCT 94	(C) ACTUAL NOV 94	(D) RE-ESTIMATED DEC 94	(E) RE-ESTIMATED JAN 95	(F) RE-ESTIMATED FEB 95	(G) RE-ESTIMATED MAR 95	(H) 6-MONTHS TOTAL
39	GENERATION MIX (%MWH)							
40	HEAVY OIL	38.50%	35.71%	29.39%	23.11%	27.44%	17.71%	28.75%
41	LIGHT OIL	0.06%	0.00%	0.24%	0.01%	0.26%	0.00%	0.09%
42	COAL	7.97%	9.53%	10.41%	10.09%	4.54%	6.89%	8.25%
43	GAS	24.15%	30.21%	28.89%	25.03%	25.69%	34.35%	27.72%
44	NUCLEAR	29.32%	24.54%	31.06%	41.77%	42.07%	41.08%	35.19%
45	ORIMULSION	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
46								
47	TOTAL (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
48								
49	FUEL COST PER UNIT							
50	HEAVY OIL ($/Bbl)	14.6294	15.0038	14.3857	14.3854	13.7934	13.2398	14.3773
51	LIGHT OIL ($/Bbl)	28.0869	24.5148	28.8885	32.5783	22.0979	28.7805	23.4891
52	COAL ($/TON)	32.0326	32.0215	36.2387	35.2515	37.5873	34.7635	34.4340
53	GAS ($/MCF)	1.6698	1.7873	2.3858	2.1816	2.2765	2.3500	2.1857
54	NUCLEAR ($/MMBTU)	0.4991	0.4676	0.4399	0.4359	0.4363	0.4359	0.4503
55	ORIMULSION ($/TON)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
56								
57								
58	TOTAL FUEL COST PER MMBTU ($/MMBTU)							
59	HEAVY OIL	2.3097	2.3618	2.2622	2.2578	2.1675	2.0800	2.2628
60	LIGHT OIL	4.8010	4.2078	4.1883	5.6975	3.9168	4.8839	4.1530
61	COAL	1.7634	1.6894	1.7998	1.7130	1.8624	1.6763	1.7207
62	GAS	1.6698	1.7873	2.3858	2.1816	2.2765	2.3500	2.1857
63	NUCLEAR	0.4991	0.4676	0.4399	0.4359	0.4363	0.4359	0.4503
64	ORIMULSION	n/a	n/a	n/a	n/a	n/a	n/a	n/a
65								
66	TOTAL ($/MMBTU)	1.5417	1.6230	1.5401	1.3308	1.3480	1.3740	1.4619
67								
68	BTU BURNED PER KWH (BTU/KWH)							
69	HEAVY OIL	9,919	9,978	9,595	9,408	9,388	9,379	9,676
70	LIGHT OIL	8,111	11,853	7,144	9,801	7,146	14,000	7,342
71	COAL	9,868	9,784	9,852	9,720	9,528	9,918	9,797
72	GAS	7,751	8,179	7,418	7,409	7,465	8,106	7,761
73	NUCLEAR	11,051	11,027	10,973	10,626	10,626	10,626	10,788
74	ORIMULSION	n/a	n/a	n/a	n/a	n/a	n/a	n/a
75								
76	TOTAL (BTU/KWH)	9,722	9,674	9,486	9,447	9,415	9,491	9,544
77								
78	GENERATED FUEL COST PER KWH (¢/KWH)							
79	HEAVY OIL	2.2911	2.3567	2.1707	2.1237	2.0349	1.9507	2.1894
80	LIGHT OIL	3.7320	4.9875	2.9958	5.4863	2.7969	6.8375	3.0493
81	COAL	1.7599	1.6530	1.7338	1.6651	1.5839	1.6616	1.6857
82	GAS	1.2942	1.4701	1.7694	1.6163	1.6993	1.9049	1.6943
83	NUCLEAR	0.5516	0.5156	0.4827	0.4632	0.4636	0.4632	0.4858
84	ORIMULSION	n/a	n/a	n/a	n/a	n/a	n/a	n/a
85								
86	TOTAL (¢/KWH)	1.4989	1.5700	1.4609	1.2571	1.2692	1.3041	1.3963

RS-4
Redacted Document No. 1
Docket No. 950001-EI
FPL Witness: R. Silva
Exhibit No. ____
Page 2 of 2
February 2, 1995

FLORIDA POWER & LIGHT COMPANY

COMPARSION OF FPL'S PROJECTED COST OF NATURAL GAS SUPPLY DELIVERED UNDER FIRM TRANSPORTATION

	CURRENT PERIOD			PROJECTED PERIOD	
	$/MMBTU	MMBTU		$/MMBTU	MMBTU
OCTOBER, 1994	$1.60	6,680,000	APRIL, 1995	$1.75	14,400,000
NOVEMBER	$1.74	7,650,000	MAY	$1.78	19,530,000
DECEMBER	$1.84	9,300,000	JUNE	$1.70	18,900,000
JANUARY, 1995	$1.94	9,300,000	JULY	$1.74	19,530,000
FEBRUARY	$1.77	8,400,000	AUGUST	$1.99	19,530,000
MARCH	$1.69	14,105,000	SEPTEMBER	$2.15	18,900,000
WEIGHTED AVERAGE TOTAL	$1.76	57,435,000	WEIGHTED AVERAGE TOTAL	$1.86	110,790,000

DIFFERENCE IN PROJECTED AVERAGE COST OF NATURAL GAS SUPPLY: $0.10

EFFECT ON PROJECTED PERIOD COST: $10,637,271.35