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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Prudency Review to Determine
Regulatory Treatment of Tampa Electric
Company's Polk Unit.)
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DOCKET NO. 960409-EI
FILED: August 5, 1996

**TAMPA ELECTRIC COMPANY'S
PROPOSED FINDINGS OF FACT**

Tampa Electric Company, in accordance with Section 120.57,
Florida Statutes, and Rule 25-22.056(2), Fla. Admin. Code, files
the following Proposed Findings of Fact:

Proposed Findings 1 - 17 Address ISSUE 1
ISSUE 1 - DOE Funding

1. The company has received to date all of the originally
expected \$100 million in DOE funding for the project construction
costs. The company has received \$10 million in additional
construction related funds and an additional \$20 million has been
appropriated and is available for the operation and maintenance
costs of the unit. (Tr. 337, lines 9-13; Tr. 495, lines 11-14; Tr.
530, lines 8-13.)

2. The Director of the DOE office that provided the DOE
funding has concluded, on the basis of annual engineering audits of
the project, that Tampa Electric managed all aspects of the Polk
IGCC project in a professional and prudent manner. (Tr. 517, lines
8-9; Tr. 519, lines 12-14.)

ISSUE 1 - Cost-effectiveness Tests

3. Tampa Electric performed a number of cost-effectiveness
evaluations of the continued cost-effectiveness of Polk Unit One in
light of more current data and assumptions at various stages of

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construction of Polk Unit One between 1992 and 1996. (Tr. 99, line 13 - Tr. 100, line 3.)

4. In each of the economic evaluations of the IGCC project during the construction of Polk Unit One the IGCC technology selected for Polk Unit One was shown to be the most cost-effective alternative available to Tampa Electric. (Tr. 96, lines 4-25.)

5. Tampa Electric performed a cost-effectiveness analysis in 1992 comparing the Polk IGCC unit versus a stand alone natural gas-fired combined cycle configured to run on natural gas. (Tr. 137, lines 12-18.)

6. After committing to the acquisition of the GE7F combustion turbine configured for the gasification process, Tampa Electric made cost-effectiveness analyses in 1993, 1994, 1995 and 1996 comparing the Polk IGCC unit with the reconfiguration of the power block it had already purchased to run on natural gas. (Tr. 137, line 19 - Tr. 138, line 1.)

7. Tampa Electric's customers will realize fuel savings beginning in the first year of operation of Polk Unit One. (Tr. 237, lines 17-19.)

8. As of 1996, Tampa Electric has calculated that the continued construction of Polk Unit One provides savings to Tampa Electric's customers of \$201 million over the life of the unit compared to Tampa Electric's next best option. (Tr. 114, line 21 - Tr. 115, line 4; Exhibit 3, pp. 41-42.)

9. The 1996 cost-effectiveness study performed by Tampa Electric shows that the break-even point for savings for the IGCC

unit is in the year 1999 or 2000 in terms of total cost. (Tr. 238, lines 15-19.)

10. The only cost-effectiveness studies presented for consideration in this proceeding were those presented by Tampa Electric Company. (Tr. 753, lines 7-12.) Staff did not perform a cost-effectiveness study comparing an IGCC to a combined cycle unit nor did they perform a cost-effectiveness study of Polk Unit One. (Tr. 752, lines 11-23.)

11. Tampa Electric performed a number of cost-effectiveness sensitivity analyses comparing the cost-effectiveness of as-available gas and firm gas for a combined cycle unit on Tampa Electric's system. In all cases, the use of as-available natural gas transportation proved to be more cost-effective than the use of firm transportation on the Tampa Electric system. (Tr. 925, line 22 - Tr. 926, line 4; Exhibit 48, p. 4.)

12. Staff's selection of an initial year comparison of Tampa Electric's IGCC with other utilities' gas-fired combined cycle units ignores the long-term fuel savings of the IGCC and the long-term higher fuel costs associated with the combined cycle units. (Tr. 941, lines 18-21.)

13. Utilizing Florida Power and Light's and Florida Power Corporation's natural gas price forecasts for 1993 and 1994, the Polk IGCC continued to be cost-effective in the 1993 and 1994 cost-effectiveness studies. (Tr. 943, lines 2-15; Exhibit 48, pp. 5-8.)

14. Tampa Electric's cost-effectiveness studies relative to Polk Unit One indicated that Polk Unit One is the most cost-

effective alternative for Tampa Electric to reliably meet its customers' needs regardless of whether sunk costs are included or excluded from both sides of the analysis. (Tr. 947, line 24 - Tr. 948, line 11.)

ISSUE 1 - Inappropriateness of Comparing Electric Utilities

15. Because of differences in size, generation mix, system economics, and the existence of DOE funding, a generating unit that is cost-effective on one system may not be the cost-effective option on another utility's system. (Tr. 947, lines 12-18; Exhibit 44, p. 192, lines 8-16; Exhibit 43, p. 91, lines 8-24.)

16. It is not possible to compare heat rates between different gas turbine installations without knowing the comparable ambient air temperatures, generator outputs and heating value basis of the computation. (Tr. 502, lines 14-18.)

ISSUE 1 - Deferral of Construction of Gasifier

17. The commitments and expenditures for the construction of the gasification assets had to occur from the outset of this project regardless of whether or not the combined cycle portion of the IGCC was put into service in 1995. (Tr. 397, lines 6-23.)

ISSUE 4 - Section 29 Tax Credits

18. In 1994 and 1995 Tampa Electric assumed the availability of Section 29 tax credits in its cost-effectiveness studies. Had the 1994 and 1995 studies reflected a petroleum coke/coal blend rather than Section 29 tax savings, the IGCC would still have been cost-effective since the company would have had the option of using either the petroleum coke or Section 29 assumption. (Tr. 238, line

20 - Tr. 239, line 14; Tr. 929, line 5 - Tr. 930, line 1; Exhibit 48, pp. 2-3.)

Proposed Findings 19 - 58 Address ISSUE 6

ISSUE 6 - Fuel Forecasts

19. No party to this proceeding other than Tampa Electric presented any fuel forecasts in this proceeding. (Tr. 753, line 22 - Tr. 754, line 14.)

20. Staff was not aware of any fuel forecaster in the country who in 1993 and 1994 was projecting a constant differential between the price of gas and coal. (Tr. 754, line 23 - Tr. 755, line 2.)

21. Staff agreed that it was the consensus of opinion in 1993 and 1994 of natural gas price forecasters that coal and natural gas prices would diverge. (Tr. 776, lines 18-25.)

22. There is no natural gas forecast different from Tampa Electric's that Mr. Breman considers valid for purposes of preparing a cost-effectiveness study. (Tr. 799, lines 13-17.)

23. Excess deliverability in the natural gas industry has declined and there has been a long-term fundamental shift in the pricing of natural gas and a significant divergence between gas and coal prices has emerged. (Tr. 295, lines 4-11; Tr. 837, line 18 - Tr. 838, line 1; Tr. 885, lines 12-18.)

24. Tampa Electric's 1992, 1993, 1994 and 1995 forecasts of 1996 natural gas prices are low compared to the actual value year-to-date for 1996. (Tr 883, lines 7-17.)

25. In each of the years 1992 - 1995 Tampa Electric and experts in the field of fuel forecasting have projected upward

pressure on the prices of natural gas in the U.S. while projecting the prices of coal to remain stable or decline. (Tr. 884, lines 6-10.)

26. Tampa Electric's 1992, 1993, 1994 and 1995 forecasts of 1996 natural gas prices were all below the natural gas prices calculated by Staff in Exhibit 40 for 1996 to date. (Tr. 807, line 23 - Tr. 808, line 22.)

27. The comparisons shown in Exhibit 47, pages 9-12, demonstrate in each year that Tampa Electric's forecast is within a zone of reasonableness compared to the other forecasters. (Tr. 886, lines 18-23; Exhibit 47, pp. 9-12.)

28. After the winter of 1995-1996, most fuel forecast experts believe that a fundamental shift in the gas markets has occurred signaling an end to the excess deliverability of natural gas or "the gas bubble." (Tr. 889, lines 8-12.)

ISSUE 6 - Staff's Calculation of Natural Gas Prices

29. Staff did not know of a forecast prepared by someone other than Tampa Electric that it considered to be correct. (Tr. 797, lines 17-19.)

30. Florida Power & Light Company buys 70% to 80% of the natural gas purchased by all Florida utilities. (Tr. 801, lines 5-7.)

31. Florida Power & Light has a number of different fuel switching strategies and a number of different types of plants that burn natural gas. (Tr. 801, lines 8-15.)

32. In comparing natural gas prices, Mr. Breman has allowed Florida Power & Light Company's natural gas prices to dominate his actual prices. (Tr. 862, lines 10-13.)

33. Because of its unique fuel switching capability, Florida Power & Light is able to "clip the tops," which means they do not buy gas when the prices are high but switch to residual fuel oil. (Tr. 862, lines 14-20.)

34. Mr. Breman's assumed natural gas prices include understated transportation costs resulting from contracts signed many years ago under Florida Gas Transmission tariffs which are no longer available to buyers seeking to deliver gas in the future. (Tr. 896, lines 15-23.)

35. Gainesville utilities paid \$1.09 greater than the as burned price listed in Mr. Breman's study included in Exhibit 39. (Tr. 804, line 17 - Tr. 805, line 1.)

36. A Florida utility with a single gas-fired plant will be unable to achieve the as burned price of natural gas paid by FPL. (Tr. 801, line 24 - Tr. 802, line 5.)

37. Mr. Breman's Exhibit 38 compared Tampa Electric's forecast of natural gas prices with FPL's as burned price of natural gas. (Tr. 800, line 24 - Tr. 801, line 7.)

38. Mr. Breman agreed that natural gas transportation to Florida could be as much as 90 cents to a \$1.00 which, together with the current gas prices for the Florida zones, produce current gas prices comparable to the ones on Mr. Breman's chart of approximately \$3.50. (Tr. 812, lines 1-21.)

39. Mr. Breman's analysis uses a smoothing technique that produces inappropriate correlations between data. (Tr. 838, lines 9-12.)

40. Mr. Breman's natural gas price analysis focuses on a period dominated by excess deliverability for natural gas and a series of warmer than normal winters that suppressed gas prices. (Tr. 838, lines 12-15.)

41. Empirical evidence of historical coal and natural gas prices illustrate that there is no linkage between coal and gas prices. (Tr. 858, lines 16-18.)

42. Mr. Breman's retrospective analysis of natural gas prices incorporates 9 years out of 11 with warmer than normal winters. (Tr. 876, lines 5-7.)

ISSUE 6 - Commission Review of Tampa Electric's Forecasts

43. Staff's recommendation in the need hearing referring to a constant price differential between coal and natural gas prices stated that "no industry expert forecasts this to occur." (Tr. 891, lines 6-16.)

44. Mini APH Order No. 24989 issued August 29, 1991 found: "There is no indication that the TECO fuel forecasts are unreasonable or inadequate for purposes of this proceeding." (Tr. 930, line 23 - Tr. 931, line 12.)

45. The Commission stated in Order No. PSC-93-0165-POF-EI, issued February 2, 1993 in Docket No. 920324-EI, that Tampa Electric's forecast models were capable of and had produced reliable projections and that the input assumptions were

reasonable. (Tr. 931, lines 23-31.)

46. The Commission stated in Commission Order No. PSC-94-1313-FOF-EG, issued October 25, 1994 in Docket No. 930551-EG, that Tampa Electric's planning process and data utilized in evaluating the DSM measures was reasonable for the purposes of that docket. (Tr. 931, line 33 - Tr. 932, line 11; Exhibit 48, pp. 28-29.)

47. In the Ten Year Site Plan workshops, conducted in the fall of 1992, 1994 and 1995, no concerns were expressed by Staff regarding Tampa Electric's planning assumptions or methodology. (Tr. 932, lines 16-21.)

48. In the written review of 1994 Ten Year Site Plans the Commission stated that it believed the load forecasting procedures of the investor-owned utilities (including Tampa Electric) provide reliable and reasonably accurate forecasts of Florida's future energy needs. (Tr. 932, line 24 - Tr. 933, line 1; Exhibit 48, p. 34.)

49. The Commission found in the 1994 Ten Year Site Plan Review that Tampa Electric's oil price forecast projecting the price of oil to rise at a relatively fixed rate through the year 2010 was reasonable for planning purposes. (Tr. 933, lines 1-5; Exhibit 48, pp. 33 and 37.)

50. In its 1994 Review of Ten Year Site Plans the Commission stated that current economic indicators predict that wellhead prices for natural gas will turn upward and rise steadily toward the price of oil, a direct reverse from previous declines. (Tr. 890, lines 24-28; Exhibit 48, p. 38.)

51. Staff also stated in the 1994 Ten Year Site Plan Review that projected coal prices remained relatively constant with slight escalation that was consistent with historical price trends, and that both Tampa Electric and Florida Power & Light forecasts indicated an even widening gap between the price of coal and natural gas. (Tr. 933, lines 5-13; Exhibit 48, p. 38.)

52. In the 1994 conservation goals docket for Tampa Electric (Docket No. 930551-EG) the Commission did not identify Polk Unit One as the avoidable unit for purposes of that proceeding. (Tr. 101, line 20 - Tr. 102, line 11.)

53. In the 1995 review of Ten Year Site Plans, the Commission again stated that Tampa Electric's load forecast was reasonable for planning purposes. (Tr. 933, lines 18-21; Exhibit 48, p. 58.)

54. In its 1995 Annual Report the Commission expressed its surprise at the "unexpectedly low price of natural gas." (Tr. 889, line 26 - Tr. 890, line 7; Exhibit 35, p. 31.)

55. In the 1995 Ten Year Site Plan Review the Commission stated that Tampa Electric's natural gas price forecasts are consistent with other utilities in terms of the projections that natural gas prices will approach and cross residual oil prices in the distant future and did not state that Tampa Electric's fuel forecasts were unreasonable. The Staff found that Tampa Electric's 1995 Ten Year Site Plan was suitable. (Tr. 933, line 21 - Tr. 934, line 3; Exhibit 48, p. 60.)

ISSUE 6 - Florida Power and FPL Fuel Forecasts

56. In 1992, 1993, 1994 and 1995 both Florida Power

Corporation and Florida Power & Light projected natural gas and coal prices to diverge in their long-term fuel forecasts. (Tr. 942, line 23 - Tr. 943, line 2; Exhibit 48, p. 62; Exhibit 43, pp. 51, line 10 - 52, line 11, 88, line 8 - 91, line 7 (see also, Deposition Exhibit No. 3); Exhibit 44, pp. 120, line 9 - 122, line 23 (see also Deposition Exhibit A).)

ISSUES 1 & 6 - Acid Test

57. During the course of this docket, Staff requested Tampa Electric to perform a number of different hypothetical economic analyses referred to by the Staff as "acid tests." In these tests Staff asked Tampa Electric to use varying assumptions regarding the relationship between coal and natural gas prices. While the acid test forecasts were not accepted by Tampa Electric as a viable forecasting method, the results of each of these analyses showed that the IGCC technology is the most cost-effective alternative. (Tr. 213, line 18 - Tr. 215, line 22; Tr. 928, lines 9-13.)

58. Each successive "acid test" suggested by Staff dictated a lower coal/gas price differential. (Tr. 894, lines 5-12.)

Proposed Findings 59 - 65 Address ISSUE 7

ISSUE 7 - Petroleum Coke

59. The Polk IGCC unit can use petroleum coke/coal blends in ratios of up to 90% petroleum coke (Tr. 413, lines 18-23); (Exhibit 15, pp. 6-7).

60. Petroleum coke has chemical, physical and handling properties similar to those of the coal that will be used in Polk Unit One. (Tr. 253, lines 19-21.)

61. Petroleum coke is readily available and is being produced at numerous refineries along the Gulf Coast, Mississippi River and throughout the Caribbean and South America. (Tr. 254, lines 4-8.)

62. Tampa Electric has adequate provisions in its existing operating permits for the transportation and gasification of petroleum coke at the Polk site. (Tr. 327, lines 1-15.)

63. Petroleum coke is a viable feedstock for Texaco gasifiers. The capability of the Texaco gasification system to utilize petroleum coke as a feedstock has been specifically demonstrated at the Ube ammonia plant in Japan which has been in operation using Petcoke since 1984. (Tr. 343, lines 4-10; Exhibit 14, pp. 234-244.)

64. By utilizing petroleum coke at Big Bend Station Tampa Electric has demonstrated the ability to procure, transport, handle and deal with petroleum coke as a fuel. (Tr. 481, line 19 - Tr. 482, line 1.)

65. Tampa Electric has in place all of the infrastructure needed to transport petroleum coke to the Polk Power Station. (Tr. 900, lines 3-18.)

Proposed Findings 66 - 68 Address ISSUE 6

ISSUE 8 - Firm vs. As-available Natural Gas

66. Tampa Electric concluded that firm gas transportation for a combined cycle unit on the Polk site was cost prohibitive based on expected low capacity factors for a combined cycle or combustion turbine as dispatched on Tampa Electric's system. (Tr. 897, line 20 - Tr. 898, line 4; Exhibit 48, p. 4.)

67. The company's analysis of firm versus as-available natural gas showed that the as-available gas option would save \$50 to \$75 million (CPW \$96) compared to the option using firm gas. (Tr. 898, lines 4-11; Exhibit 48, p. 4.)

68. In December of 1992 in the FPL-Cypress Energy need proceeding, the Commission recognized that the acid test is not a forecast and the Commission stated:

We certainly do not believe that gas prices and coal prices will maintain the constant differential. . .

(Tr. 889, lines 17-25; Tr. 927, lines 2-22; Order No. PSC-92-1493-FOF-EQ, issued December 28, 1992 in Docket No. 920520-EQ; Exhibit 48, p. 11.)

Proposed Findings 69 - 85 Address ISSUE 9

ISSUE 9 - Prudent Management of Construction Costs

69. In the Polk Unit One need determination proceeding, an estimated cost of \$413 million for Polk Unit One (excluding land acquisition and site development costs) was the basis for the \$195 million savings identified in the need hearing order. (Tr. 104, lines 7-11; Tr. 406, lines 17-22; Exhibit 37, p. 58, lines 9-18.)

70. At the time of the need hearing neither the detailed technical requirements for the Polk site nor the final environmental permitting requirements had been determined. (Tr. 406, line 25 - 407, line 3.)

71. Based on a consistent comparison that excludes the estimated land acquisition costs, site development costs and AFUDC expense the comparative costs of Polk Unit One have remained

relatively unchanged (4.3% above the December 9, 1991 need hearing estimate). (Tr. 346, line 24 - Tr. 347, line 3.)

72. Land acquisition and site development costs were excluded from the need determination cost benefit analyses because they would have been common for any generation technology at the Polk site. (Tr. 37, lines 6-12; Tr. 407, lines 4-8.)

73. In Florida Power Corporation's economic analysis of its Polk County site the costs for developing the site were not included because it was a common cost, so that amongst a selection of alternatives it was a constant that would not have made a significant change in the results. (Exhibit 44, deposition transcript p. 24, lines 5-16.)

74. There is no testimony in this proceeding showing that Tampa Electric's construction, cost management, engineering or testing of Polk Unit One was imprudently carried out. (Tr. 969, lines 1-4.)

ISSUE 9 - Land and Site Development

75. Tampa Electric's environmental permitting required the reclamation of nearly 800 acres of wetlands. (Tr. 268, lines 19-22.)

76. In addition to the wetland acres, environmental reclamation standards calling for two acres to support each acre of wetland required over 2,300 acres of the Polk Power Station's site. (Tr. 268, line 22 - Tr. 269, line 3.)

77. In addition to environmental mitigation requirements, Tampa Electric requires land for the Polk Unit power block,

gasification plant, fuel handling and storage facilities, transmission and switching station facilities and other related plant facilities. (Tr. 269, lines 8-12.)

78. A significant portion of the Polk site is required for the cooling reservoir and buffer areas. (Tr. 269, lines 12-14.)

79. Tampa Electric selected the Polk A site after calculating that it had a \$25 to \$30 million lower present value cost than the Polk Two site and about \$50 to \$60 million less than the Polk One site. (Tr. 356, lines 13-17.)

80. The American Cyanamid parcel, in addition to being necessary for transmission corridors and a substation facility, allowed Tampa Electric to accomplish the necessary replacement of vegetation and to provide a buffering zone and was used to provide fill material for the development of the balance of the site and to meet some environmental requirements of the company's permit. (Tr. 358, lines 17-21; Tr. 466, lines 9-14.)

81. By acquiring the 775 acre parcel from American Cyanamid and using that parcel for on-site fill requirements, Tampa Electric saved approximately \$8.5 million from what it would have cost for the company to purchase the necessary fill materials. (Tr. 501, lines 10-15.)

82. The land acquisition and site development costs incurred by Tampa Electric at its Polk Unit One site compares very favorably with Florida Power Corporation's estimated expenditures for land acquisition and site development of its Polk County site on a cost per megawatt of installed capacity basis. (Tr. 408, lines 10-20.)

83. The parcel lying west of State Road 37 was required to satisfy the wetland mitigation requirements of Tampa Electric's environmental permit. (Tr. 466, lines 15-19.)

84. In the Polk Unit One Need Determination Study and in the interrogatory answers in the need proceeding, Tampa Electric disclosed that it had already obtained 3,572 acres of land for the Polk site at a cost of \$12,504,093 or approximately \$3,500/acre, that the company would have reclamation obligations and that it planned to acquire approximately 775 additional acres for use at the site. (Tr. 499, lines 11-25; Exhibits 25-26.)

85. The land acquisition and site development costs estimated at \$65,835,000 had to be expended in order to build the first megawatt of generating capacity at the Polk site, i.e., before the first unit could be placed in service. (Tr. 631, lines 6-13 - Tr. 634, lines 8-13.)

ISSUE 12 - Port Manatee

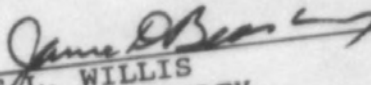
86. The Port Manatee site is still being held as a potential site for a future power plant. (Tr. 554, lines 12-13.)

ISSUE 14 - Alternative Cost Recovery

87. Today's customers are enjoying the lower revenue requirements of older projects as well as the higher revenue requirements of newer ones, so that on a complete cost of service basis one tends to compensate for the other. (Tr. 991, lines 17-22.)

DATED this 5th day of August, 1996.

Respectfully submitted,


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