ORIGINAL

TAMPA ELECTRIC COMPANY
DOCKET NO. 990007-EI
FILED: 10/1/99

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

DONALD E. PLESS

Q. Please state your name, address and occupation.

A. My name is Donald E. Pless. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am Director, Advanced Technology for Tampa Electric Company ("Tampa Electric" or "company").

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

A. I graduated from Purdue University in 1966 with a Bachelor of Science degree in Mechanical Engineering. I am a Registered Professional Engineer in Florida and Indiana. I spent the first eight years of my career working for a midwest electric utility performing engineering and construction management on new coal fired units and also environmental retrofit projects. I began my career with Tampa Electric Company in 1974 as a construction supervisor for the new coal fired unit, Big Bend Unit 3. Since that time, I have been in a position

of increasing responsibility for most of Tampa Electric's new unit additions and major environmental retrofit projects. I held the positions of Director of Power Plant Engineering from 1980 to 1987 and Director of Fuels from 1987 to 1990 for Tampa Electric. I was Director of Advanced Technologies for TECO Energy's affiliate, TECO Power Services, from 1990 to 1997. In 1997, I was named Director, Advanced Technology for Tampa Electric Company. As part of my current role, I am the Project Manager for the Big Bend 1 and 2 Flue Gas Desulfurization project ("FGD system").

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe Tampa Electric's FGD system that is under construction to serve Big Bend Units 1 and 2 and to demonstrate that the costs related to the FGD system are reasonable and prudent. I will describe Tampa Electric's progress to date in the construction of this FGD system and I will identify actual expenditures of the project to date. I will also compare the budgeted total cost of the project with updated total cost projections and explain any significant variances. Finally, I will address projected net operating costs associated with the system and

compare them to Tampa Electric's original estimate. My testimony is submitted for the purpose of supporting costs attributable to the FGD system as well as the costs the company proposes for Environmental Cost Recovery Clause ("ECRC") recovery in the upcoming January 2000 through December 2000 cost recovery period.

Q. Have you prepared an exhibit to support your testimony?

A. Yes, I have. My Exhibit No. ___ (DEP-1) was prepared under my direction and supervision and consists of two documents.

The FGD System Project

Q. What has been your role in the FGD system project?

A. In late 1997, I was assigned the position of Project Manager of the Big Bend 1 and 2 FGD system project. In this role, I am responsible for the overall management of the engineering, construction, and start-up of the FGD installation.

Q. Please describe the FGD system and explain how it operates.

A. An FGD system or "scrubber" consists of equipment capable of removing SO_2 from the flue gas generated by the combustion of coal. The flue gas is directed to an absorber tower where it is treated with a slurry spray of limestone and water. The SO_2 in the flue gas is absorbed by the slurry to form an acid that is then neutralized by the dissolved limestone. The reaction of the SO_2 and limestone produces calcium sulfite that is then oxidized by the introduction of air into the reaction tank. The product of this forced oxidation is gypsum which is then precipitated out of the solution. The resulting gypsum slurry is then de-watered to produce a near-dry gypsum cake that is sold as a raw material, predominantly to wallboard producers.

Q. Please describe the costs of the project and its expected in-service date compared to the company's projections that supported approval of the project in Order No. PSC-99-0075-FOF-EI dated January 11, 1999 in Docket No. 980693-EI?

A. Tampa Electric had originally projected the system to be in service in June 2000 with an expected cost of almost $82 million without allowance for funds used during construction ("AFUDC"). Tampa Electric expects to

complete the construction of the FGD system at the budget that supported Commission approval of this project. The project is expected to undergo a final operational checkout beginning in late November and the system is scheduled to be in full operation on December 18, 1999, about six months earlier than originally projected in Docket No. 980693-EI. I will describe this in more detail later in my testimony.

FGD Expenditures

Q. What has Tampa Electric done to manage and control the costs of the FGD system?

A. As with any major engineering project, in order to develop appropriate design parameters, and prior to committing major capital resources on the construction of the FGD system for Big Bend Units 1 and 2, Tampa Electric conducted detailed testing based on prior successes on Big Bend Units 3 and 4 to determine design, construction, and operating and maintenance ("O & M") parameters which would optimize the total installed cost of the system. The results of these tests were then made a part of the design specifications used by bidders seeking to supply and erect the FGD system.

Prudent selection of the architectural engineering (A/E) and construction management (C/M) company was accomplished by Tampa Electric's established bid process. Based on a preliminary conceptual scope of work, bids were received from several pre-qualified A/E's. The eventual award for the A/E and C/M services was based on the lowest evaluated pricing, coupled with a proposed action plan for achieving project completion. The selected A/E had just completed a similar retrofit for a major FGD installation.

The contract was structured to include incentive payments that encouraged the contractor to meet his obligations in ways that would help Tampa Electric meet its overall project objectives related to total installed cost, schedule completion, and satisfactory unit performance. In this arrangement, a portion of the contractor's profit was contingent upon his successfully using his prior experience and expertise to meet these pre-established and agreed upon targets.

In this manner, the A/E was incented to use prudent and effective conceptual, preliminary, and detailed engineering in order to optimize the complex interactions between design, construction, and operational cost and

schedule factors. The A/E would be encouraged and rewarded to achieve all the process design requirements and accelerate the project schedule, all while not going over the pre-determined project cost of almost $82 million excluding AFUDC. This was anticipated to ensure environmental compliance at the lowest reasonable cost.

Q. What are the currently projected total capital expenditures of the project and how do they compare to the total budgeted costs as presented by Tampa Electric in Docket No. 980693-EI?

A. Document No. 1 of my exhibit presents an updated, detailed A/E engineering estimate of the total project costs without AFUDC, compared to the estimate provided in Docket No. 980693-EI. This document shows that the total currently projected capital expenditures of the project without AFUDC are expected to be almost equal to those previously projected costs upon which the Commission's decision was based.

Q. Please discuss the acceleration in the project schedule.

A. In the proceeding for Docket No. 980693-EI, Tampa Electric indicated that it would proceed on a schedule to

place the system in service in June of 2000. The company also indicated it would attempt to achieve an earlier in-service date. The company has been able to accomplish this goal and plans to place this system into commercial operation on December 18, 1999.

Net Operating Costs

Q. What are the projected O & M costs for the FGD system?

A. The projected annual O & M costs for the Big Bend Units 1 and 2 FGD system are $4,275,272.

Q. How were the projected O & M costs developed?

A. The projected O & M costs were developed based upon forecasted SO_2 emissions, SO_2 removals, correlated usage of consumables, proposed budget plans and outage schedules, and from previous years' experiences on the existing FGD equipment.

Q. What additional payroll costs do you anticipate with the new FGD system and what functions will any additional personnel perform?

A. Tampa Electric will require additional personnel, including training, to operate the new FGD system. Four positions will be created to handle the increased equipment operational needs.

Q. Overall, were there any changes in the project assumptions from the original estimates for O & M?

A. Yes. The most significant change was associated with design development associated with the wastewater treatment system, and its need for additional reagent, and the unavailability of county recycled water. However, the anticipated higher O & M expense for the year 2000 will decrease in 2001 after installation of an alternative water source is completed.

Q. You mentioned that the FGD system operations result in a by-product, gypsum. What are the expected revenues for 2000 from the sale of gypsum and how was this determined?

A. The company's expected revenues from commercial-grade gypsum sales will be approximately $800,000 for the year 2000. This is based upon established contracted prices.

Q. What are the currently projected net operating costs of the project and how do they compare to the total budgeted costs as presented by Tampa Electric in Docket No. 980693-EI?

A. Document No. 2 of my exhibit presents an updated estimate of annual net operating costs compared to the estimate provided in Docket No. 980693-EI. This document shows that the total currently projected net operating costs of the project are expected to be almost equal to those previously projected costs upon which the Commission's decision was based.

Q. Please summarize the costs for which Tampa Electric seeks recovery in the January 2000 through December 2000 ECRC cost recovery period.

A. Total capital costs for the FGD system are expected to be $81,871,387 without AFUDC and $83,394,877 with AFUDC. Net operating costs are expected to be $3,475,272, which is comprised of projected O & M of $4,275,272 less projected gypsum revenues of $800,000. These estimates have been provided to Tampa Electric witness Karen O. Zwolak for inclusion in the company's ECRC schedules.

Q. Please summarize your testimony.

A. The original conceptual cost estimate for this project was $82 million excluding AFUDC. The originally planned in-service date was June 2000. The company now estimates that project expenditures will be almost at the original $82 million estimate while placing the unit in service approximately six months ahead of schedule. The company also expects net operating costs, consisting of O & M of about $4.275 million less projected gypsum revenues of $800,000, to be almost equal to those originally projected.

Based upon the above, Tampa Electric proposes that all expenditures and costs for the Big Bend 1 and 2 FGD system be deemed by this Commission to be reasonable and prudent.

Q. Does that conclude your testimony?

A. Yes, it does.

BIG BEND UNITS 1 & 2 FGD PROJECT

DETAILED A/E ENGINEERING		ORIGINAL FORECAST	CURRENT FORECAST	VARIANCE OVER/(UNDER)
Site Development	$	117,000	96,589	(20,411)
Earthwork & Piling		2,169,100	3,164,729	995,629
Structural Concrete		8,153,500	7,573,077	(580,423)
Structural Steel		2,699,100	5,336,227	2,637,127
Mechanical Process Equipment		9,032,700	19,278,634	10,245,934
FGD System		25,477,320	17,987,055	(7,490,265)
Material Handling		614,100	1,242,418	628,318
Piping		1,371,700	415,379	(956,321)
Insulation		179,600	620,537	440,937
Instrumentation		2,007,800	1,352,019	(655,781)
Electrical		4,766,300	684,830	(4,081,470)
Painting		113,500	0	(113,500)
Building Architectural		190,500	1,146,158	955,658
Dewatering		257,500	54,387	(203,113)
SUBTOTAL A/E		57,149,720	58,952,039	1,802,319
TECO PROVIDED COST INFORMATION				
Construction Management		2,708,216	2,040,770	(667,446)
Professional Engineering Services		5,212,152	11,250,000	6,037,848
Owner Controlled Costs		7,299,863	7,293,729	(6,134)
Contingency		2,465,049	2,334,849	(130,200)
Added 2nd Vacuum Filter		1,000,000		(1,000,000)
County Water Supply		1,000,000		(1,000,000)
Waste Water System		5,000,000		(5,000,000)
TOTAL PROJECT W/O AFUDC	$	81,835,000	81,871,387	36,387

EXHIBIT NO. _____
DOCKET NO. 990001-EI
TAMPA ELECTRIC COMPANY
(DEP-1)
DOCUMENT NO. 1

BIG BEND STATION UNITS 1 & 2 FGD SYSTEM

ESTIMATED ANNUAL NET OPERATING COSTS

		ORIGINAL ESTIMATE	CURRENT ESTIMATE	VARIANCE OVER/(UNDER)
LIMESTONE SYSTEM	$	125,114	119,163	(5,951)
ABSORBER SYSTEM		309,339	294,626	(14,713)
WASTE HANDLING SYSTEM		93,996	89,525	(4,471)
FGD SUPPORT/CONTROLS		7,935	7,558	(377)
STAFFING (OPERATIONS)		315,346	315,346	0
WATER COSTS **		212,180	650,000	437,820
WASTE WATER TREATMENT		106,090	101,044	(5,046)
SUBTOTAL PLANT O&M		1,170,000	1,577,263	407,263
LIMESTONE COSTS		2,064,775	1,949,921	(114,854)
DIBASIC ACID COSTS		265,225	300,000	34,775
HYDRATED LIME - New Waste Water System		0	448,088	448,088
SUBTOTAL REAGENTS		2,330,000	2,698,009	368,009
TOTAL ANNUAL O&M EXPENSE	$	3,500,000	4,275,272	775,272
GYPSUM REVENUES		0	(800,000)	(800,000)
ANNUAL NET OPERATING COST		3,500,000	3,475,272	(24,728)

** Non recurring water costs after well system installed.

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DOCUMENT NO. 2