GULF POWER COMPANY

Before the Florida Public Service Commission
Direct Testimony of
M. W. Howell
Docket No. 891345-EI
Date of Filing December 15, 1989

Q. **Please state your name, business address and occupation.**

A. My name is M. W. Howell, and my business address is 500 Bayfront Parkway, Pensacola, Florida 32501. I am Manager of Transmission and System Control for Gulf Power Company.

Q. **Have you previously testified before this Commission?**

A. Yes. I have testified in various congeneration, territorial dispute, planning hearing, and fuel clause adjustment dockets.

Q. **Please summarize your educational and professional background.**

A. I graduated from the University of Florida in 1966 with a Bachelor of Science Degree in Electrical Engineering. I received my Masters Degree in Electrical Engineering from the University of Florida in 1967, and then joined Gulf Power Company as a Distribution Engineer. I have since served as Relay

Engineer, Manager of Transmission, Manager of System Planning, Manager of Fuel and System Planning, and Manager of Transmission and System Control. My experience with the Company has included all areas of distribution operation, maintenance, and construction; transmission operation, maintenance, and construction; relaying and protection of the generation, transmission, and distribution systems; planning the generation, transmission, and distribution system additions in the future; bulk power interchange administration; overall management of fuel planning and procurement; and operation of the system dispatch center. I have served as a member of the Engineering Committee and the Operating Committee of the Southeastern Electric Reliability Council, chairman of the Generation Subcommittee and member of the Edison Electric Institute System Planning Committee, and chairman or member of a number of various technical committees and task forces within the Southern electric system and the Florida Electric Power Coordinating Group, regarding a variety of technical issues including generation expansion, transmission expansion, transmission interconnection requirements, central dispatch, transmission system operation, transient stability, underfrequency operation,

generator underfrequency protection, system production costing, computer modeling, and others.

Q. Have you prepared an exhibit that contains information to which you will refer in your testimony.

A. Yes. My exhibit consists of two schedules to which I will refer. Each schedule of this exhibit was prepared under my supervision and direction.

Counsel: We ask that Mr. Howell's Exhibit, comprised of two Schedules, be marked for identification as Exhibit___(MWH-1).

Q. Are you the sponsor of certain Minimum Filing Requirements (MFRs)?

A. Yes. Those which I am sponsoring are listed on Schedule 2 of my exhibit. To the best of my knowledge, the information in all of the listed MFRs is true and correct.

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

A. I will address the Company's participation in the Intercompany Interchange Contract (IIC), the benefits it provides to Gulf's customers, the Company's

off-system sales, transmission line rentals, transmission operation and maintenance (O & M) expenses, the transmission construction program, and services provided by Southern Company Services, Inc., (SCS) for the transmission and interchange functions.

Q. What is the function of the IIC?

A. The contract is a mechanism wherein the operating companies of the Southern electric system - Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, and Savannah Electric and Power Company - agree to operate an integrated electric system or power pool. The IIC is dynamic in nature in that it is reviewed annually and updated as required to reflect changing conditions. The contract is prepared under direction of the system Operating Committee, which consists of one representative from each operating company and one representative from SCS. The transactions involved in system operations and the sharing of benefits and burdens of pooling among member companies are specified in the IIC. Under terms of the IIC, the generating resources of all member companies are economically dispatched to serve the total system load requirements. This concept insures that multiple

benefits accrue to the customers of each operating company.

Q. What are the benefits Gulf customers derive from this type of pooling arrangement?

A. Gulf's customers benefit tremendously from Gulf participating in this pooling arrangement. This Commission has consistently recognized these benefits in past proceedings and rate orders. Our analyses over the years have consistently shown that Gulf's customers receive millions of dollars of benefits annually as a result of Gulf's participation in the pool, as opposed to operating separately. These benefits include, but are not limited to, the following:

1. Economic dispatch production cost savings.
2. Economic sharing of generating reserve capacity.
3. Ability to install large, efficient generating units.
4. Reduced requirements for operating reserves.
5. Pool market for temporary surpluses of capacity and energy on Gulf's system.

6. Ready supply of energy for purchase when Gulf is short.
7. Long-term power sale revenues.
8. Unit power sale benefits.
9. Peak-hour load diversity.
10. Economy energy transaction benefits.

These multiple benefits that accrue to Gulf and the other system operating companies result from the coordinated planning and operation of the power pool. Certainly, increased reliability is a major factor in pool operation. In the event of the loss of generation or transmission ties within Gulf's system, the pool responds instantly with replacement capacity and energy from the most economical source available at the time. Southern's many transmission interconnections with neighboring utilities also allow us to purchase power for the system in an emergency; therefore, the multiple transmission ties to other regional utilities ensure that we can buy the cheapest energy available at all times.

Certainly, a major benefit of the pool to Gulf Power has been the selection of generating unit size in the Southern system. Because of the capacity

equalization process under the IIC, we have been able to completely own or purchase shares of 500 mw and 800 mw state-of-the-art generating units. This capacity has been purchased at lower cost per kw and is more efficient generation than otherwise would have been available to a relatively small company such as Gulf. We could not support a sufficient spinning reserve for such large units without participating in the Southern electric power pool. Thus, it is our participation in the pool and the IIC that enables Gulf's customers to achieve the savings associated with these large units.

Coordination of major maintenance periods for turbine inspections can be a major problem for a company of Gulf's size. However, with the coordinated maintenance planning that takes place within the Southern system, we are able to accomplish major maintenance on our large generating units and purchase economical replacement power at the same time.

Gulf is also able to share in the diversity of power needs resulting from the system providing service to such a large geographical region. The territories of the system companies have weather, time zone, and customer mix differences. These differences result in variations in load patterns because the

operating companies do not all reach their annual peak demand at the same time. This improves overall system load factor and means that fewer generating units have to be constructed and committed to service at a given time, thus creating lower system production costs.

Q. How will the Plant Daniel and Plant Scherer capacity that was previously committed to Unit Power Sales be treated in the IIC?

A. Now that this power is no longer committed to Unit Power Sales, it is a generating capacity resource for the territorial customer, and is treated like any of the Company's other territorial generating capacity resources.

Q. How is the IIC budget determined?

A. The IIC budget is determined on a annual basis. The two components are the capacity and energy portions of the budget. Capacity determinations are made on a monthly basis, driven by each Company's forecasted peak hour monthly load and expected generating capacity. Sales from a surplus company to a deficit company are based on average embedded fossil generation costs. The energy budget is prepared utilizing a probabilistic dispatch model which

determines the most economical generation sources each hour to provide for the entire Southern system load. When it is more economical to buy from another pool member, rather than generate, the model captures this in the dispatch simulation. All the energy transactions for a year are aggregated by the model, and this information is represented in our pool budget.

Q. Does membership in the Southern electric system power pool enable Gulf to participate in multiple off-system power sales agreements?

A. Yes. The Southern electric system is in a regional position that allows the interchange and sale of power directly to thirteen other utility systems. Gulf has actual transmission line connections to only two of these systems. The IIC, which governs the operation of the Southern system power pool, provides for the equitable distribution of these sales among system companies, and this allows Gulf to be a party to thirteen different interchange contracts with regional utilities. Some of these neighboring utilities are heavily dependent upon oil and natural gas for electric generation. Because Gulf Power and the Southern system have an excellent mix of generation

resources with a high percentage of economical coal capacity, a market for sales of electricity off the Southern system has resulted. The coordination and economic dispatch of these generation resources make the Southern system a reliable source of economically priced energy for the entire region.

These off-system sales fall into three categories: (1) Economy energy sales, (2) Long-Term Non-Firm capacity and energy sales, and (3) Unit Power Sales (UPS). Economy energy sales occur when Southern's incremental energy price is below that of purchasing utilities. These sales have no associated capacity, and the energy is priced on a split-the-savings basis such that the customers of both the selling and purchasing utilities benefit. Currently, the Southern electric system sells economy energy to ten neighboring utilities. In the future, the system will continue to market this service to the extent that it remains beneficial to the territorial customers of the Southern electric system.

Long-Term Non-Firm sales consist of capacity which is supplied out of the mix of fossil units on the Southern system with energy sold at incremental cost. Contracts for these sales allow the system's operating companies to recall this capacity whenever

needed for its own territorial customers. Currently, the system has one Long-Term Non-Firm customer who has contracted sales until May, 2000.

UPS are sales of capacity and energy entitlements, based on specific generating units. These sales provide for capacity based on unit-specific costs. Currently, the generation contracted in the 1982 UPS agreements ("old" UPS) is being provided by generating units at Plants Miller and Scherer to two customers until May, 1995. The Southern system recently executed new UPS ("new" UPS) contracts which cover sales to three utilities within the state of Florida for the period 1993 through 2010. The new UPS contracts are basically identical to those executed in 1982 and are the product of comprehensive and extended negotiation between representatives of the Southern operating companies and representatives of the three purchasing utilities. In the period from January 1, 1993, to June 1, 1995, these new contracts provide options which would allow the full contract amount to be purchased by the UPS customers. These sales will be made out of Units 1 through 4 of the Miller Plant owned by Alabama Power and Unit 3 of the Scherer Plant jointly owned by Georgia Power and Gulf Power. New UPS will allow the Southern operating

companies to substitute peaking capacity for coal base-load generating units at a lower total cost to the territorial customer. Schedule 1 of my exhibit summarizes the off-system sales now contracted by Southern.

The Southern operating companies are continually evaluating new markets for off-system sales, including Unit Power Sales. This action will continue to be an alternative for future generation needs if the Southern system companies can sell base capacity, replace it with combustion turbines or other capacity, and thereby save money for their territorial customers.

Q. What has been the impact of off-system sales on Gulf's retail customers?

A. These sales have provided revenues from short-term surplus energy and capacity which have substantially reduced the revenue required from the retail customer to provide long-term reliable electric service.

The capability to participate in regional power sales provided by its membership in the Southern electric system pool has enabled Gulf Power to purchase a share of Plants Daniel and Scherer at tremendous savings to our customers.

During the early 1990's time frame, the off-system sales outlook shows that the Southern system may have additional capacity to sell if a potential purchaser can be located, including our 63 mw of Plant Scherer Unit 3. Beyond the mid 1990's, the system's reserves are projected to be within the target range.

Q. Does Gulf have transmission facility agreements which are related to its ownership in Plants Daniel and Scherer?

A. Yes. Gulf has such agreements with Alabama Power Company, Mississippi Power Company, and Georgia Power Company. These agreements, sometimes referred to as transmission rental agreements, compensate these companies for their transmission facilities used by Gulf to deliver our capacity and energy from the jointly owned plants in Mississippi and Georgia to our service territory. The charge to Gulf from Mississippi Power is related to the Daniel-Wade-Barry 230 kilovolt transmission line which begins at Plant Daniel in Mississippi, runs to the Wade Substation in Mississippi, and terminates at Plant Barry in Alabama.

The charge to Gulf from Alabama Power is related to the Barry-Crist 230 kv line which begins at Plant

Barry in Alabama and interconnects with the Gulf Power system at the Florida state line.

These charges to Gulf from Alabama Power and Mississippi Power are based on the cost of these transmission facilities, and are a small fraction of what a fully embedded transmission service charge or alternative transmission construction would cost Gulf.

The charge to Gulf from Georgia Power is related to transmission facilities owned by Georgia Power which are utilized to deliver capacity and energy from Plant Scherer Unit 3. This charge is significantly less in 1990 than what a fully embedded transmission service charge or alternative transmission construction would cost Gulf. In all cases, the available alternatives of a fully embedded transmission service charge or construction of new facilities were evaluated prior to our decision.

Q. Please summarize transmission O & M expenses for 1990 as compared to the benchmark level for transmission.

A. Total transmission O & M expenses consist of two major categories: transmission line rents, and other transmission expenses. Total transmission line rents for 1990 are budgeted to be $3,017,839. While

Mr. Scarbrough has discussed the accounting treatment related to transmission line rental benchmarks, I want to emphasize that the benchmark philosophy really is inadequate to determine a reasonable level of expenses in this area. Earlier, I discussed the manner in which the transmission line rental charges were determined and stated that they represented significantly less cost to Gulf's customers than the other alternative of utilizing the standard embedded cost of transmission facilities as a basis for transmission service charges. Thus, not only will our customers realize millions of dollars in savings over the life of the associated shared plants through generation cost savings, but they also receive additional savings through the lower transmission service costs which we have been able to secure. Because of this, it is simply inappropriate to apply a benchmark philosophy to this class of expenses without making the adjustments set forth in Mr. Scarborough's testimony.

The remaining transmission O & M expenses for 1990 are budgeted to be $4,279,584, while the 1990 benchmark amount for this area is $3,602,137. These expenses are over their benchmark by $677,447. This difference is due to the need for new funds to conduct

groundwater testing at Gulf's substation sites in order to comply with the State of Florida, Department of Environmental Regulations' Consent Order #88-0471. A justification of this variance appears in MFR C-57.

As discussed in Mr. Gilbert's testimony, each department at Gulf Power Company which charges to transmission accounts goes through a detailed review during each budget cycle regarding expenses for the budget year which are necessary to maintain a dependable and reliable transmission system. These expenses are reviewed on a departmental and company-wide basis before being recommended for approval by the budget committee. Thus, these expenses receive several levels of review prior to being included in the budget.

Q. What transmission efficiency improvements has Gulf implemented since 1984?

A. In 1985, Gulf purchased a second mobile substation unit and located it in Panama City. This unit provides transformer overload relief, reduces construction costs, and allows facility maintenance and testing to be performed without service interruption. Also in 1985, a program was initiated to bid out the reclearing of transmission line

rights-of-way. Bids are received from several contractors early in the year in which reclearing is required so as to insure the lowest possible cost for the work required.

Also, the use of computer equipment has been significantly expanded since 1984 to relieve departmental personnel of many tasks now more easily and efficiently done via computer. The production of many vital reports, which were previously generated by hand, are now produced by computer.

Q. **Please give a summary of your transmission construction program.**

A. At the end of 1990, our total transmission plant-in-service is projected to be $189 million. Our current estimate for 1990 indicates that we expect to spend approximately $10.3 million for new construction. These transmission expenditures are necessary to serve new customers, to strengthen the transmission system to meet additional demand resulting from load growth, and to replace damaged, worn-out, or obsolete facilities. All of these transmission construction items are necessary to serve the customer's current and future electric needs.

All transmission capital projects are reviewed each year before they are either added to or retained in the budgeting process. Long-range transmission planning studies are performed annually which determine future transmission system improvements which will be needed in the coming ten-year period. When future deficiencies are expected, alternative improvements are determined, and the most cost-effective solution is recommended for inclusion in the budget. Several departments within the company review these recommendations to ensure that these are the most cost-effective and practical solutions available. Additionally, all projects, including transmission and other functional areas, are subjected to a comprehensive review by a corporate task force prior to being recommended to the budget committee for inclusion in the budget. Generically, a project is included in the budget at least four years before expenditures will be required. Once a project is in the budget, it is subjected to the same rigorous review on a annual basis as any new project; thus, a transmission capital project will generally have a number of reviews prior to dollars actually being spent on the improvement.

Q. **What is Gulf doing to minimize new construction expenditures?**

A. Transmission system improvements are evaluated on an alternative economic basis before being included in the budget. Construction for major transmission lines is awarded on the basis of competitive bids from qualified contractors. Transmission equipment and material requirements are also awarded on the basis of competitive bids. This process ensures the lowest installed cost to Gulf's customers.

Q. **Please describe the services provided to your department by Southern Company Services.**

A. Transmission and System Control takes advantage of the pool of specialized professionals at Southern Company Services, Inc. (SCS) who utilize highly developed computer facilities to assist in the evaluation, design, and operation of Gulf's transmission facilities. These services are not only economical because of the sharing of these pooled resources with other operating companies in the system, but also because they are provided at cost to Gulf Power.

These services provided by SCS include transmission system equipment evaluations, transmission line and substation design, coordination

of Gulf's transmission system operations through the Power Coordination Center in Birmingham, processing of system operations data, system security, power marketing activities, and Interchange Contract budgeting and billing.

Q. Please summarize your testimony.

A. Because of Gulf's participation in the Southern system power pool and the IIC, there are tremendous monetary benefits which are provided to Gulf's customers. The low cost, shared capacity which Gulf was able to purchase at Plants Daniel and Scherer are examples of how our participation in the IIC has benefited our customers. Because Gulf is affiliated through the contract with an extremely large power system, there are opportunities for off-system sales which result from the other system companies and their interconnections with outside utilities. These opportunities for additional sales have provided significant additional monetary benefits to our retail customers. Our transmission construction and O & M costs are carefully controlled, and we are within the Commission's benchmark levels except for the groundwater testing program which is required as a new area of expense by the State of Florida. Our efforts

in securing transmission facility agreements related to our shared ownership of capacity at Plants Daniel and Scherer have resulted in significant savings over standard transmission arrangements, thus significantly reducing the long-term cost to customers. In all our activities in the transmission and interconnection area, Gulf has consistently acted prudently and devised contracts and procedures which will serve to minimize our customer's long-term cost.

Q. Does this conclude your testimony?

A. Yes.

AFFIDAVIT

STATE OF FLORIDA)

COUNTY OF ESCAMBIA)

Before me the undersigned authority personally appeared M. W. Howell, who first being duly sworn, says that he is the witness named in the testimony to which the Affidavit is attached; that he prepared said testimony and any exhibits included therein on behalf of Gulf Power Company in support of its petition for an increase in rates and charges in Florida Public Service Commission Docket No. 891345-EI; and that the matters and things set forth herein are true to the best of his knowledge and belief.

Dated at Pensacola, Florida this 8 of December, 1989.

M. W. Howell

M. W. Howell

Sworn to and subscribed before me
this 8 day of December, 1989.

Notary Public

My Commission Expires: 8/14/93

Florida Public Service Commission
Docket No. 891345-EI
Gulf Power Company
Witness: M. W. Howell
Exhibit No. (MWH-1)
Schedule 1

SUMMARY OF SOUTHERN SYSTEM

OFF-SYSTEM CAPACITY SALES

YEAR	CONTRACT PERIOD	FPL UPS OLD	FPL UPS NEW	JEA UPS OLD	JEA UPS NEW	FPC UPS NEW	TAL (1) "E/F"	TOTALS "E/F"	TOTALS UPS	TOTALS TOTAL
1990	JAN - MAY	2070		414			50	50	2484	2534
	JUN - DEC	2068		414			50	50	2482	2532
1991	JAN - APR	2068		413			75	75	2478	2554
	MAY	2063		412			75	75	2475	2550
	JUN - DEC	2062		412			75	75	2474	2549
1992	JAN - MAY	2060		412			75	75	2472	2547
	JUNE - DEC	2069		413			25	25	2482	2507
1993	JAN - MAY	1721		343			25	25	2064	2089
	JUNE - DEC	1023	305	204	78		40	40	1608	1648
1994	JAN - MAY	1023	304	204	75	202	40	40	1808	1848
	JUNE - DEC	511	458	103	151	202	50	50	1423	1473
1995	JAN - MAY	511	455	103	151	405	50	50	1625	1675
	JUNE - DEC	0	913	0	202	406	75	75	1521	1596
1996	JAN - DEC	0	913	0	202	406	75	75	1521	1596
1997	JAN - MAY	0	913	0	202	406	75	75	1521	1596
	JUNE - DEC	0	913	0	202	406	85	85	1521	1606
1998	JAN - DEC	0	913	0	202	406	85	85	1521	1606
1999	JAN - DEC	0	913	0	202	406	85	85	1521	1606
2000	JAN - MAY	0	913	0	202	406	85	85	1521	1606
	JUN - DEC	0	913	0	202	406	0	0	1521	1521
2001-09	JAN - DEC	0	913	0	202	406	0	0	1521	1521
2010	JAN - MAY	0	913	0	202	406	0	0	1521	1521

(1) Long-term Non-firm Sales

1

RESPONSIBILITY FOR MINIMUM FILING REQUIREMENTS

SCHEDULE	TITLE
A-8	Five Year Analysis - Change in Cost
C-8	Report of Operation Compared to Forecast - Revenues and Expenses
C-12	Budgeted Versus Actual Operating Revenues and Expenses
C-19	Operation and Maintenance Expenses-Test Year
C-20	Operation and Maintenance Expenses-Prior Year
C-21	Detail of Changes in Expenses
C-57	O & M Benchmark Variance by Function
C-60	Transactions with Affiliated Companies
C-61	Performance Indicies
C-65	Outside Professional Service
F-9	Forecast Models
F-17	Assumptions