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ORIGINAL
FILE COPY

Jack L. Haskins
Manager of Rates and Regulatory Matters
and Assistant Secretary

the southern electric system

July 23, 1990

Mr. Steve Tribble, Director
Division of Records and Reporting
Florida Public Service Commission
101 East Gaines Street
Tallahassee FL 32399-0870

Dear Mr. Tribble:

RE: Docket No. 891345-EI

Enclosed are an original and fifteen copies of Gulf Power Company's Late Filed Exhibit Nos. 588 to be filed in the above docket.

Sincerely,

Jack L Haskins

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ACK Enclosures
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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Petition of Gulf Power Company for a Rate Increase) Docket No. 891345-EI

Certificate of Service

I HEREBY CERTIFY that a copy of the foregoing has been furnished this 23rd day of July, 1990 by U. S. Mail or hand delivery to the following:

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HYPOTHETICAL EXAMPLE DEMONSTRATING IMPACT OF UNIT POWER SALES ON RETAIL CUSTOMERS

This exhibit is intended to provide a simple demonstration of the effect Unit Power Sales (UPS) have on customers in the retail jurisdiction. There are several important principles that must be set forth as part of this demonstration. First, a distinction must be drawn between the terms "capacity" and "energy". Next, it is important to recognize the role and limitations of the test year concept in setting rates to meet a utility's retail revenue requirements. Finally, it must be remembered that all of Gulf's generating capacity has been acquired or built by Gulf to serve the electric power needs of its retail customers. The UPS concept is just one of the tools used by the Company to lower the cost of electric service to its retail customers over the long term.

Capacity and Energy

There are two components to the supply of electric power -- capacity and energy. While the term "energy" refers to the product electricity itself, the term "capacity" describes the

resources which make it possible for the utility to provide consumers with the product (energy) they use. It is possible to illustrate the relationship between capacity and energy with an analogy to a bucket of water used to extinguish a fire. The bucket itself is the capacity in this example and the water constitutes the product (energy) desired by the consumer. In the case of electricity, a generating plant essentially constitutes a capacity resource and electric energy is the product created by running the generators at the plant.

A certain amount of capacity is necessary in order to ensure that anticipated need for the product can be met on demand. The need for product (energy) varies from one time period to another and therefore the extent to which a capacity resource is utilized also varies from one time period to another. The cost of having particular capacity available to serve does not go away if the capacity is not used to produce energy in a given period. The cost of capacity is essentially a fixed cost, not tied to energy use. Once again, using the fire bucket example, the cost of having the bucket available is there regardless of whether a fire occurs. Of course, the cost of the water (product) is incurred only when it is used.

Since the cost of existing capacity is largely fixed, the determination of which capacity resource to utilize for meeting the demand for product (energy) in a given period of time is primarily a function of the relative differences in running cost for the various capacity resources, including fuel cost. In order to keep the cost of energy as low as possible, capacity resources are selected for use (dispatched) to meet a given demand for energy at a given moment in the order of increasing running and fuel costs, within operational limitations. In other words, since the cost of capacity is essentially a sunk cost, it is not generally considered in the moment-to-moment decisions as to which capacity resource will be called upon to produce needed energy (product). (See discussion at page 11 of Order No 12634, issued 10-27-83, Docket 820406-EU)

Test Year and Retail Rates

Retail electric rates (non fuel) for a regulated utility are typically set at the level necessary to meet the utility's anticipated annual revenue requirements, including a reasonable return on the investments made to serve the retail customers. In

order to determine this level of rates, a test year is examined in the context of a rate case. The purpose of the examination is to determine whether the level of investment and expenses during the test year is a reasonable approximation of the level of investment and expenses that will exist during the future period that new base rates will be in effect.

It is important to understand that a utility's levels of investment (rate base) and expenses are dynamic, changing over time. Budgeted expenses change from year to year. A utility adds new investment to plant-in-service, etc. and retires old investments on a monthly basis. As a result, the test year levels of investment and expenses can be, and are, nothing more than approximations of a utility's actual operations in the future. Once rates are set, the utility's earnings are monitored through the monthly surveillance reporting process to determine whether the rates in effect are either inadequate or more than adequate to meet the revenue requirements for the investment in place and the expenses incurred during the period being monitored.

There is a common and oft stated misconception about rate base. It is the belief that when a particular item of investment property is included in a utility's rate base for purposes of

setting the utility's non fuel rates, then that particular item is being paid for by the customers who pay the rates. This is not the case. Rates include a component intended to produce a reasonable return on a level of investment measured in part by the investment for that particular item. If that item were disposed of, the utility's rates would be overstated only if there have been no offsetting additional investments or increase in expenses necessarily made or incurred to provide electric service to the retail customers. Once again, the monthly surveillance reporting process enables the Commission to monitor the changes in the levels of investment and expenses so that appropriate action can be taken to adjust rates when they become inappropriate or inadequate as demonstrated if the utility's earnings (return) begin to stray outside of the range of reasonableness. The monthly surveillance reporting process, unlike the test year used in setting rates, allows for and considers the dynamic nature of a utility's levels of investment and expenses.

Hypothetical

In order to demonstrate how Unit Power Sales interact with the retail revenue requirements, examples involving both base rates and fuel charges must be used. The following examples are each based on a hypothetical 800 MW generating plant out of which varying amounts of capacity are sold through unit power sales. For the example involving the fuel charges, a hypothetical month is used which is applicable to either of the years set forth in the example involving non fuel rates.

Base Rates

For the non fuel (base) rates, assume that in year 1 (the test year) base rates are set to recover the revenue required to support the level of investment in place and expenses incurred during the test year. This includes the amounts related to an 800 MW generating plant, 25% of which is sold under UPS in the test year and therefore removed from the retail rate base and expenses. Further assume that rates remain at the level set in the test year through year 5, during which an additional 25% of the 800 MW plant is sold under UPS and replaced in retail rate base by other less

costly capacity. The 800 MW plant was built prior to year 1 for the purpose of serving the long term needs of the retail customers. The investment and expenses are a fact of life and therefore the total revenue requirements must be met each year. The following chart sets forth the total and retail revenue requirements associated with the hypothetical 800 MW plant in year 1 and in year 5.[1]

	YEAR 1 800 MW plant 25% sold UPS annual revenue requirements ($000)	YEAR 5 800 MW plant 50% sold UPS annual revenue requirements ($000)
to support:		
total investment	74,000	74,000
total expenses	33,000	33,000
system total	107,000	107,000
remaining retail:		
investment	55,500	37,000
expenses	24,750	16,500
retail total	80,250	53,500

[1]For purposes of this demonstration, depreciation and other expected changes to rate base or expenses have been excluded.

In year 1, the UPS customer is supporting 25% of the investment and covering 25% of the expenses related to the 800 MW plant. As a result, base rates to the retail customers are $26,750,000 lower than they would otherwise be without UPS. In year 5, the investment and expenses reflected on the monthly surveillance reports, since only the investment and expenses dedicated to retail service at that time are included, would be adjusted to remove the investment and expenses related to the additional UPS beginning that year. Thus the utility's actual earnings reflected in the surveillance reports would automatically reflect the fact that the revenue required from the retail jurisdiction for the 800 MW plant is only 2/3 of the retail revenue required for that plant when base rates were set. Thus, by looking at the utility's return on the surveillance reports, the Commission would be able to decide whether there have been additional investments and/or expenses in other areas of the utility's retail operation sufficient to offset the reductions in retail revenue requirements related to the new UPS. If so, the utility's return would still fall within the range of reasonableness. If not, appropriate action could then be taken to adjust retail rates. In this manner, the UPS

revenues provide direct benefits to retail customers by reducing the level of revenue they would otherwise be required to produce through the rates they pay.

Fuel Cost Recovery

Up to this point, the discussion has essentially focused on the capacity side of the hypothetical. Although there is a small energy component collected through base rates, the major cost component to the energy used by the retail customer is related to the fuel cost recovery clause. Page 10 of this exhibit consists of a simplified schedule used in the calculation of the costs recovered through the fuel clause for fuel and purchased power. The attached schedule sets forth 4 case scenarios for a hypothetical month. Under all 4 cases, the retail customers' energy usage is the same: 144,000,000 KWH which is equivalent to the energy output of the hypothetical 800 MW plant when run at a 25% capacity factor.[2] In cases 1 and 2, the retail load is met by running the hypothetical plant. In cases 3 and 4, the retail load is met through purchased power assuming the availability of lower priced economy energy throughout the month. In cases 1 and

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[2] In this context, capacity factor refers to the ratio of the average operating load of an electric power generating unit for a period of time to the capacity rating of the unit during that period.

$$\frac{\text{Generation Per Month}}{\text{720 Hours X Net Generating Capacity (KW)}} = \text{Capacity Factor}$$

3, the utility's UPS customer schedules energy out of the plant during the month equivalent to a 25% capacity factor.

By comparing the bottom lines of case 1 with case 2 and of case 3 with case 4, it can be seen that the retail customers are held at least neutral with regard to their fuel cost, with or without a UPS commitment. In fact, as discussed by Mr. Dawson (Tr. pp. 1355-1357), the retail customer actually enjoys lower fuel costs because of the operational flexibility provided to the utility through the existence of the UPS transactions. The comparison of case 2 with case 3 is symbolic of this benefit.

GULF POWER COMPANY
FUEL AND PURCHASED POWER RECOVERY CLAUSE CALCULATION

	WITH UPS COMMITMENT RETAIL BY OWNED GEN		NO UPS COMMITMENT RETAIL BY OWNED GEN		WITH UPS COMMITMENT RETAIL BY ECONOMY		NO UPS COMMITMENT RETAIL BY ECONOMY	
	CASE 1		CASE 2		CASE 3		CASE 4	
	COST	KWH	COST	KWH	COST	KWH	COST	KWH
1. FUEL COST OF SYSTEM NET GENERATION	$5,760,000	288,000,000	$2,880,000	144,000,000	$2,880,000	144,000,000	$0	0
5. TOTAL COST OF GENERATED POWER	5,760,000	288,000,000	2,880,000	144,000,000	2,880,000	144,000,000	0	0
7. ENERGY COST OF ECON PURCH	0	0	0	0	2,736,000	144,000,000	2,736,000	144,000,000
12. TOTAL COST OF PURCHASED POWER	0	0	0	0	2,736,000	144,000,000	2,736,000	144,000,000
13. TOTAL AVAILABLE KWH		288,000,000		144,000,000		288,000,000		144,000,000
16. FUEL COST OF UNIT POWER SALES	(2,880,000)	(144,000,000)	0	0	(2,880,000)	(144,000,000)	0	0
18. TOTAL FUEL COST AND GAINS OF POWER SALES	(2,880,000)	(144,000,000)	0	0	(2,880,000)	(144,000,000)	0	0
20. TOTAL FUEL & NET POWER TRANSACTIONS	$2,880,000	144,000,000	$2,880,000	144,000,000	$2,736,000	144,000,000	$2,736,000	144,000,000

Conclusion

In both the fuel and non fuel examples, the retail customers receive direct benefits from the UPS concept. As pointed out in the introductory discussion, the UPS concept is just one of the tools used by Gulf Power Company to lower the cost of electric service to its retail customers over the long term. In the case of fuel cost recovery, UPS provides the Company with greater operational flexibility which can result in fuel cost savings to Gulf's retail customers. Of much greater significance are the benefits made available to the retail customers by UPS through the effect on retail revenue requirements met by base rates. The surveillance reports automatically reflect the fact that the revenue required from the retail jurisdiction for a unit sold through UPS subsequent to the test year when base rates were set are lower than they otherwise would be. Thus, by looking at the utility's return on the surveillance reports, the Commission is able to decide whether there have been additional investments and/or expenses in other areas of the utility's retail operation sufficient to offset the reductions in retail revenue requirements related to the new UPS. In this manner, the UPS revenues provide direct benefits to retail customers by reducing the level of revenue they would otherwise be required to produce through the rates they pay.