DOCKET NO. E-2, SUB 297

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

IN THE MATTER OF

APPLICATION OF
CAROLINA POWER AND LIGHT COMPANY
FOR INCREASE IN ITS RATES AND CHARGES

TESTIMONY OF

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DIVISION OF ENGINEERING

STAFF, NORTH CAROLINA UTILITIES COMMISSION

March 23, 1977

Q. Will you state for the record your name, address, and present position?

A. My name is John Reed Bumgarner, Jr. I am employed as a Utilities Engineer by the North Carolina Utilities Commission, One West Morgan Street, Raleigh, North Carolina.

Q. Will you state your education and experience?

A. I graduated from North Carolina State University in 1972 with a B. S. in Electrical Engineering. In February of 1973, I started in my present position as a Utilities Engineer with the Commission Staff. That following summer I underwent a four-week training program in distribution engineering with Duke Power Company. I have participated in several major service investigations in conjunction with requests for general rate increases, and have also investigated numerous complaints of individual customers concerning their quality and level of electric service.

In New River Light and Power Company's general rate case in Docket No. E-34, Sub 7 I reviewed and revised that company's cost of service study. I also reviewed Carolina Power and Light Company's jurisdictional allocation study in its most recent rate case (Docket No. E-2, Sub 264) and Nantahala Power and Light Company's cost of service and jurisdictional allocation studies (Docket No. E-13, Sub 29).

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

A. The Commission Staff has reviewed Carolina Power and Light Company's cost of service and jurisdictional allocation studies. One purpose of this testimony is to briefly describe the methods used by Carolina Power and Light and to present the conclusions of the Staff's review of these studies. The results of the Staff's investigation of the Company's adjustment for probable future revenues and expenses applicable to electric plant in service at the end of the test year are also presented in this testimony.

Q. What is the purpose of a jurisdictional allocation study?

A. Carolina Power and Light Company operates one sytem which supplies electrical power to customers in both North and South Carolina. In addition, in both states, Carolina Power and Light has wholesale customers whose rates are regulated by the Federal Power Commission. Before the North Carolina Utilities Commission can determine a just and reasonable level of rates for Carolina Power and Light's North Carolina retail customers, the Company's plant revenues, and expenses must be separated to obtain that portion of the Company's operations applicable to these customers. The jurisdictional allocation study is an engineering study which separates the utility's operations between states and regulatory jurisdictions.

Q. Would you briefly describe the allocation methods used by the Company in its jurisdictional allocation study?

A. Yes. The basic allocation factors used in Carolina Power and

Light Company's study were the power supply-production, power supply-transmission, and energy factors.

The power supply demand factors were based on the system coincident peak demand which occurred August 25, 1975.

The energy factors were calculated by obtaining energy (KWH) sales by jurisdiction then expressing them as percentages of total system.

Electric plant in service was allocated basically as follows: Production plant was allocated using the power supply-production factor. Transmission plant was allocated on both the power supply-transmission and the power supply-production factors. Distribution plant was directly assigned to states and between wholesale and retail by specific analysis. General plant was functionalized into production, transmission and distribution categories and allocated on the basis of related plant. Intangible plant was allocated on the basis of all other electric plant.

Allocation of other items in the rate base are as follows: The depreciation reserve, functionalized into the plant categories, was allocated on the basis of related plant. Net nuclear fuel was allocated using the energy factors. Minimum bank balances were allocated on the basis of total plant investment. Prepayments were allocated on gross plant where direct assignment was

not possible. Cash requirements were determined as 1/8 of operating and maintenance expense less purchased power. Contributions in aid of construction were directly assigned.

Expenses were functionalized and allocated on varying factors. Production expense was separated between demand and energy and was allocated on power supply-production demand or energy factors, respectively. Transmission expense was allocated on related plant. Distribution expense, functionalized into substations, overhead lines, underground lines, meters, and other, was allocated on the basis of related plant accounts. Both customer accounting expenses and sales expenses were specifically assigned. Administrative and general expenses were allocated by various factors when direct assignment was not possible. Depreciation expense was functionalized into production, transmission, distribution and general plant categories and then further assigned and allocated based on related functional plant. After direct assignment to North Carolina and South Carolina, state income taxes were allocated on the basis of taxable income. Federal income taxes were calculated using taxable income. Taxes deferred in prior years were allocated using power supply-production demand factors. Both the provision for deferred income taxes and investment-tax credit were functionalized and then allocated on related plant factors.

Revenues, for the most part, were directly assigned.

Q. What conclusions did the Staff reach after its review of Carolina Power and Light Company's jurisdictional allocation study?

A. The Staff agrees with Carolina Power and Light Company's use of the coincident peak method of determining the demand allocation factors, and with the other procedures and factors used in the jurisdictional allocations. The coincidental peak method, more closely than any other, allocates demand related plant and associated expenses needed to supply the maximum system load to the customers which are causing the load. This is even more appropriate in that most of the extensive amount of plant now being constructed by CP&L is being built to supply an ever increasing peak load.

The Commission's Accounting Staff is, however, proposing to use a method different than the Company for calculating material and supplies and cash working capital.

Q. Did the Staff investigate the Company's adjustment for probable future revenues and expenses?

A. Yes. This adjustment is usually called the growth to year end adjustment.

Q. What were the Staff's conclusions with regard to this growth adjustment?

A. For the most part, this method is essentially the same as employed in previous rate hearings and the Staff is in agreement with its use.

However, in the case of the industrial class, the company substituted a rate of growth which reflects the historical growth rate of this class. It is the Staff's opinion that this variance is inconsistent with the purpose of the growth to year end adjustment. The accounting staff has therefore adjusted the revenue and kilowatt hours for the industrial class to reflect the method used in the previous docket (E-2, Sub 264).

Q. Did you also review the company's cost of service study in this docket?

A. Yes, as a part of its investigation in this docket, the Staff has studied the Retail Operations Cost Allocation Studies (Cost-of-Service Studies) filed by the Company in this proceeding.

Q. What is a Retail Operations Cost Allocation Study?

A. This study is an allocation procedure to separate the costs of operating a utility system among rate classifications. In this study revenues, expenses, and rate base are divided among the rate classifications. From this data, a rate of return can be calculated for each classification. Thus, this study gives an indication of the actual costs of serving each rate schedule and can be used as a guide in the design of rates which reflect these costs. In addition, since all items can be separated on demand, customer, or energy related factors, it is possible to determine from the study the demand, customer, and energy related costs. These separated costs provide another useful tool for use in design of rates.

Q. Are you familiar with the Retail Operations Cost Allocation Study filed by CP&L in this docket?

A. Yes. I have reviewed CP&L's study in detail.

Q. What were the results of your review of the studies filed by the Company?

A. I will not summarize the details of CP&L's study because a good description of the Company's study is included in the Company's Exhibits as Horne Exhibit No. 1. This study was performed in a similar manner to past studies filed with the Commission, and in accordance with Commission Staff recommendations in past dockets.

Q. Does the Commission Staff agree with the Company's use of the single summer coincident peak for the cost allocation study in light of the growth of the winter peak in recent years?

A. Yes. During the past several years Carolina Power and Light has clearly been a summer peaking system. During the same period though, the winter peak has been growing in magnitude faster than the summer peak. In fact, the 1975-1976 winter peak far exceeded all predictions because of the record cold weather occurring during the week of January 17, 1977.

Discounting this abnormal peak, however the company has historically been summer peaking and the staff feels that the summer coincident peak is the appropriate one to use in this study. The staff would recommend however, that in future proceedings the Commission should

look not only at a single peak method of allocation, but also at other methods utilizing more than one peak.

Q. Does this conclude your direct testimony?

A. Yes, it does.