

CAROLINA POWER & LIGHT COMPANY

TESTIMONY OF JAMES M. DAVIS, JR.

1 Q. Please state your name and address.

2 A. James M. Davis, Jr., Raleigh, North Carolina.

3 Q. What is your position with Carolina Power & Light Company?

4 A. I am Assistant Director of Rates and Regulation.

5 Q. Will you briefly describe your educational and professional
6 background.

7 A. I am a graduate of North Carolina State University, from which
8 I received a Bachelor of Science Degree in Mechanical Engineering.
9 After three years' service as an officer in the U. S. Air Force,
10 I was employed by Pratt and Whitney Aircraft as a test engineer
11 in the Experimental Engineering Department. In 1965 I went to
12 work with Carolina Power & Light Company as an engineer in the
13 Special Services Section. I joined the Rates and Regulation
14 Department in February, 1968, and in July, 1970, I was named to
15 my present position.

16 My education in the ratemaking area has consisted of parti-
17 cipation in the development of the load survey, cost analysis,
18 rate evaluation, and rate design programs of the Company. This
19 work has included the studies that were necessary in the prepara-
20 tion of the filings and case materials for retail and wholesale
21 rate increase requests, including our Company's prior requests to
22 this Commission. I have attended a training program conducted

1 by Ebasco Services, public utility consultants, and I have
2 worked with a number of rate consultants in the preparation of
3 rate case material. I have attended meetings of the Rate
4 Research Committee of the Edison Electric Institute. I am a
5 registered Professional Engineer in the State of North Carolina.

6 Q. Have you testified before a regulatory authority prior to this
7 case?

8 A. Yes, I have testified before this Commission in prior rate
9 proceedings and before the South Carolina Public Service
10 Commission and the Federal Power Commission.

11 Q. Please summarize your duties with Carolina Power & Light
12 Company.

13 A. The Department of which I am Assistant Director is responsible
14 for the development, issuance, and interpretation of the rates
15 and service practices of the Company. I am responsible to the
16 Vice President and Director of Rates and Regulation for the
17 direction and supervision of the studies underlying the theoret-
18 ical and practical aspects of our rate structure; the preparation
19 of rates and revenue comparisons; the direction and supervision
20 of cost allocation studies; and the development of financial and
21 cost studies underlying the exhibits which were filed with the
22 Application in this proceeding, and supervised the preparation
23 of the proposed rates and rate schedules.

24 Q. Will you please explain the scope of testimony you intend to offer
25 here?

1 A. I will present the actual operating results of the Company during
2 the test period consisting of the twelve months ending June 30,
3 1976, with appropriate adjustments. This material will be presented
4 on both a system-wide basis and as indicated in the testimony of
5 Mr. Horne as allocated and apportioned to the operations which are
6 subject to the jurisdiction of this Commission. I will also present
7 the proposed rates for which the Company is requesting approval in
8 this proceeding. In presenting the proposed rates, I have included
9 the rate design objectives and monthly rate charges included in the
10 rate schedules, as well as certain administrative changes we are
11 requesting in the provisions of some of the individual rate
12 schedules. My testimony will show the monetary effect that the
13 proposed rates would have had on the Company's operation as adjusted
14 had the changes been in effect during the test period of twelve
15 months ending June 30, 1976. These test year results include adjust-
16 ments to reflect changes in cost levels which will occur up through
17 the anticipated time of the hearing in this proceeding. In order that
18 these changes in cost might be measured in the context of a full
19 twelve-month test period, I will present in my testimony the effect
20 that the proposed rates would have on a test period ending the first
21 quarter in 1977. This additional test period data has been developed
22 on the basis of six months' actual experience and six months' estimated
23 results..



1 Q. Where have you shown the historical test period operating results
2 with the present rates in effect?

3 A. -Davis Exhibit No. 1 sets forth the operating experience for the
4 historical test period in this proceeding. This exhibit is the
5 same as Exhibit H filed as a portion of our Application. Column 7
6 sets forth the allocated North Carolina retail operations. The
7 procedures used to obtain the allocation were described in the
8 testimony of Mr. Horne.

9 This exhibit shows the actual June 30, 1976 test period
10 operations adjusted to properly reflect for the purpose of juris-
11 dictional ratemaking those changing conditions which were not fully
12 reflected in the actual results of the test period. Included there-
13 in are those pro forma adjustments explained in the testimony of
14 Mr. Paul Bradshaw. In addition, I have included certain adjustments
15 which were calculated under my direction and supervision. These
16 adjustments include the annualization for the effect of previously
17 allowed rate increases, an adjustment for the probable future
18 revenues for the plant in service at the end of the period, a weather
19 normalization adjustment, and the normalization and annualization of
20 the addition of the Brunswick No. 1 nuclear generating unit.

21 Q. Will you please explain the adjustments which you have included
22 starting first with the adjustment for prior rate increases?



1 A. During the test period of June 30, 1976, the Company received
2 retail and wholesale rate increases which were not fully
3 reflected in the test year revenues. It was necessary to com-
4 pute the annual effect of these rate increases and add to the
5 test year revenues the additional revenues that would have
6 been produced had these increases been in effect throughout the
7 test period. These adjustments restate the test year revenues
8 to reflect fully the effect of the prior rate increases which
9 occurred during the test period.

10 The second adjustment adds revenues and adjusts the test
11 year expenses for kilowatt-hour sales related to the investment
12 in the rate base at the end of the test period. This adjustment
13 is necessary to annualize the KWH energy sales to the level
14 reflecting probable future revenues and expenses from the plant
15 in service at June 30, 1976. This reflects growth from an
16 increased number of customers and increased usage from existing
17 customers. This adjustment, which results in the addition of
18 \$9,872,302 revenue to the North Carolina retail operation, was
19 computed on the method approved by this Commission in our prior
20 cases and reflects a full year's normal growth for our sales
21 experience during the historical test period. One adjustment was
22 made to our normal method of computation to reflect a reduction
23 to the test year rate of growth in industrial kilowatt-hour sales.
24 Because of the rapid industrial recovery reflected in the last quarter
25 of 1975, and the first quarter of 1976, the test year growth in



1 industrial sales is somewhat overstated. The test year sales reflect
2 an annual growth rate in the industrial classification of almost 10%.
3 This is substantially above our present sales forecast and was, there-
4 fore, reduced to reflect an annual growth rate of 8.25% in industrial
5 energy sales.

6 The third adjustment which I have included adjusts revenues and
7 expenses to reflect normalized weather conditions in the historical
8 test period. The test year kilowatt-hour sales for the residential
9 and commercial classifications were adjusted to show higher revenues
10 that would have been received had the test year weather conditions
11 been closer to the long-term degree day averages for our service area.
12 Adjustments to reflect normalized weather have been included by this
13 Commission in its orders approving our last two rate increases.

14 As will be described later in my testimony, we are preparing to
15 revise our billing procedures so that initial and final bills will be
16 prorated on the basis of a 30-day month. This change will result in
17 the prorated bills more accurately reflecting the proportional cost
18 which the customer should pay when he only uses service for part of a
19 billing period. An adjustment to the test period revenues has been
20 included for the effect of this change in billing procedures.

21 The remaining adjustment which I have included adjusts revenues,
22 expenses, and rate base to reflect the full annualization of the
23 addition of the Brunswick No. 1 nuclear generating unit. This adjust-
24 ment is essential to state the operating results of the Company on the

1 basis of a full year's operation of this new generating resource.
2 The adjustment includes many aspects in order to fully reflect the
3 effect on our operating results from the addition of Brunswick
4 No. 1. Each respective adjustment to revenues, expenses, and rate
5 base was computed on the basis of the Brunswick No. 1 unit
6 operating at a 75% capacity factor during the test period. This
7 availability was selected because it reflects a full year's
8 operation including a refueling cycle.

9 In order to compute the effects of the availability of Brunswick
10 No. 1 for the entire test period, it was necessary to develop a power
11 estimate which would restate the generation from system resources to
12 include the addition of this large nuclear unit. Purchases and inter-
13 change transactions were also analyzed to determine if purchases could
14 have been reduced to an economic advantage if the nuclear unit had
15 been available. When this analysis was completed, the results stated
16 the adjusted generation from each of our existing units. This reduced
17 generation was then analyzed to determine the fuel requirements that
18 would have existed with the reduced generation. Our fossil fuel
19 purchases during the test period were reviewed to determine the effect
20 of the fossil generation which would have been replaced by the nuclear
21 unit. In order to evaluate the fuel purchases, we eliminated the
22 highest price spot purchases that were made in each month at each of
23 the plant locations based on the reduced generation for that
24 respective plant.

25 The reduced fuel purchases were then processed through our fuel
26 inventories to determine adjusted unit fuel prices. The adjusted fuel



1 prices were then used as a basis to calculate fuel adjustment charges
2 that would have resulted from the adjusted fuel purchases and
3 consumption. This calculation was necessary to reduce the revenues
4 that would have been produced during the test year by the approved
5 fuel charges.

6 Also included in the calculations of the annualization of the new
7 Brunswick No. 1 unit were the necessary adjustments to reflect the
8 effect of the first Brunswick Unit for the months of the test period
9 prior to its commercial service in November, 1975. The months of July
10 through October, 1975, in the test period include adjustments to reflect
11 both Brunswick No. 1 and No. 2 units. The completion of these detailed
12 calculations to fully annualize the operation of the Brunswick nuclear
13 generating units resulted in the following adjustments. North Carolina
14 retail revenues were reduced by \$34.5 million. The test year fuel expense
15 was reduced by a net of \$28.1 million, with purchased power expense
16 reduced by \$4.7 million. Other production and O & M expenses were
17 increased by \$5.5 million. Plant in service was increased by \$204 million,
18 and the depreciation reserve increased by \$8.6 million. Depreciation
19 expenses, property taxes, and working capital were also adjusted to conform
20 to the related adjustment items. The adjustment to the working capital
21 allowance includes a reduction in the coal supply on hand at the end of
22 the test period to the established system goal of 1,750,000 tons. For
23 North Carolina retail operation this reduced the rate base by \$2.7 million.
24 Q. Will you please describe the rates proposed by the Company in this
25 proceeding?



1 A. The existing rates for retail service in North Carolina were included
2 as Exhibit A in our Application filed in this proceeding. Those are
3 the rates that were approved by this Commission in our most recent
4 general rate case, Docket E-2, Sub 264.

5 Exhibit B filed with the Application contains the proposed rates
6 and rate schedules intended to supersede the existing schedules. For
7 convenience, the proposed schedules are presented with this testimony
8 as Davis Exhibit No. 2. The Approved Fuel Charge Rider, which is
9 reviewed and approved monthly will continue, of course, to be a part
10 of the rate structure. We are not requesting a change in the fuel
11 cost formula used to determine the Approved Fuel Charge. We are
12 recommending that the present fuel adjustment formula approved in
13 our last general rate case be continued without modification and
14 have reflected the 8.50 mills per kilowatt-hour base fuel cost in
15 the design of the requested rates included in Davis Exhibit No. 2.

16 The monthly rate charges included in the requested rates are
17 those charges necessary to recover the revenue increase requested in
18 this proceeding. The rate schedules presented in Davis Exhibit No. 2
19 containing the requested monthly rates and charges constitute a set
20 of just and reasonable rates appropriate for our Company and reflect
21 the costs of providing service to the various types of customers in
22 our service area.

23 Q. Are you requesting changes in rate schedules other than stated monthly
24 charges for electric service?

1 A. Yes we are. The rate schedules requested in this proceeding contain
2 a number of changes intended to improve the administration of the
3 rate schedule provisions. Corresponding changes in the Service
4 Regulations related to the respective rate schedules are also requested
5 in this proceeding, and the appropriate pages of the Service Regulations
6 have been included in Davis Exhibit No. 2. The following is a summary
7 discussion of the requested changes in the rate schedule provisions:

8 Rate Schedule Designation - A new system of letter designation has
9 been proposed to identify the rate schedules requested in this
10 proceeding. The new designations, as shown on Davis Exhibit No. 2,
11 contain an abbreviation for the type of service provided under the
12 schedule and a numeric designation to identify the particular revision
13 in the rates. An example of the new designation is for the Small
14 General Service Schedule. The requested identification would be SGS-1.
15 This replaces the prior designation of G-1U. It is hoped that the new
16 designation will simplify the reference to the rate schedules, identify
17 the service provided under the schedule by abbreviation, and provide a
18 number indication of the particular revision of the rate schedule in
19 effect.

20 Type of Service - The reference to the type of service provided under
21 the requested rates has been revised from 60 cycle to 60 hertz. This
22 change is requested to conform to the currently accepted industry
23 terminology in reference to electric service.



1 Billing Demand - The billing demand provision in each of the rates
2 containing a separately stated demand charge has been changed to
3 include the additional phrase "or computed by or from Company's
4 metering facilities during a 15-minute interval within the current
5 billing month". This change is requested to clarify the language
6 related to the use of magnetic tape metering equipment where the
7 demand designation is determined from computer tape and printouts
8 rather than registered on a conventional demand meter.

9 Q. What changes have you requested in the provisions of the Company's
10 Service Regulations?

11 A. We have requested language changes related to the above revisions in
12 the rate schedule revisions, plus additional changes to update the
13 provisions of our filed Service Regulations. In order to set out
14 clearly the additional changes in provisions of the Service Regulations,
15 I have included Davis Exhibit No. 3 which lists and identifies the
16 proposed changes included in the Service Regulations' pages in Davis
17 Exhibit No. 2 and includes a brief statement of the reasons for each of
18 the requested changes.

19 Only two of the requested changes have any effect on the revenues
20 or expenses of the Company. These two items are the requests for an
21 increase in the service charge to provide electric service to a new
22 account from the present \$2.00 to \$5.00. This requested increase is to
23 bring this service charge more in line with the present cost of energizing
24 the service and establishing a new billing account record for a service
25 location. The charge also reflects the fact that under the Commission
26 rules the Company will be reading the meter each time an account is

1 connected at a service location. Although not included in the \$5.00
2 service charge, the Company will also be reading the meter each time
3 an account is disconnected. The expenses for the reading of initial
4 and final bills and the revenues to be derived from the \$5.00 service
5 charge have been included as adjustments in the test year operations
6 in my exhibits.

7 The second requested change in the Service Regulations
8 affecting expenses of the Company is a provision to prorate service
9 based on a thirty-day billing month for initial and final bills
10 caused by a change in customer account or for abnormal billing
11 periods related to rerouting of meter reading schedules. This method
12 of prorating based on a thirty-day billing month more accurately
13 reflects the proportional cost which the customer should pay
14 when he only uses service for a part of the normal monthly billing
15 period. The change in revenues related to the proposal for bill
16 proration is included as an adjustment to the test year revenue.

17 Q. Mr. Davis, returning to the rate schedules that you are presenting,
18 do the requested rates provide for a uniform increase among the
19 customer classes?

20 A. No, they do not. The rate increases requested on the base rate
21 charges for each class are close to the average 15% overall increase
22 but do vary slightly based on the results of our cost allocation
23 studies for the various customer classes. The slight difference in
24 the average increases between the classes seeks to recognize the
25 areas of cost differences in providing service and is predicated
26 on the results of our most recent retail operations cost allocation
27 study which was presented by Mr. Horne.

1 In addition to the variation on the major customer classes
2 of residential, small general service, large general service,
3 and outdoor lighting, the individual rates within these major
4 classes also vary on the percentage rate increase.

5 On the basis of the historic test year sales, the average
6 percent increase on the retail classification on base rate
7 charges is approximately 15%. As pointed out in our Application
8 and other testimony in this proceeding, this is the percentage
9 increase on base rate charges. The total revenues would not
10 increase by 15% because there would be an accompanying decrease
11 in the fuel charges related to the addition of Brunswick No. 1
12 nuclear generating unit.

13 On the basis of the average 15% increase in base rates, there
14 are some variations between the customer classes. The residential
15 class would receive a total increase of 14.97%, which is slightly
16 below the overall average. The service for outdoor lighting would
17 receive an increase of 14.94%, which is also slightly below the
18 overall average. The two general service classifications, small
19 general service and large general service, would receive increases
20 slightly above the overall average: 15.44% for the small general
21 service class, and 15.15% for the large general service class.

22 Q. Did you use the results of the June 30, 1976 retail cost allocation
23 study in the design of the rates requested in this proceeding?

1 A. Yes, I did. The relative relationship of the rates of return among
2 the various customer classes, and to a lesser extent the individual
3 rate schedules, was used as a guide in the distribution of the rate
4 increase among the customer classes. It continues to be our objec-
5 tive to design our rates in such a manner as to produce a more uni-
6 form rate of return among the retail classes. We have made
7 considerable progress in our recent rate cases in moving our rates
8 of return toward the overall retail average. We have continued that
9 movement in this rate case.

10 Q. Please describe the manner in which the rates requested in this
11 proceeding were designed.

12 A. The rates requested in this proceeding were designed to produce the
13 revenues that have been requested and to satisfy the short-term and
14 long-term objectives of our rate structure. The short-term objec-
15 tives are to streamline and combine as many of the existing schedules
16 with similar service as possible, to equalize by class of service the
17 customer charge component, and to eliminate or standardize rate blocks
18 and charges wherever possible. These goals were established within
19 the overlying framework of moving all rate classes to within 10%
20 variation of the rate of return for the retail class average as developed
21 in the cost allocation study.

22 On a more long-term basis, we have established the objectives of a
23 rate structure which would contain three or four major rate classes and
24 nine to twelve individual service schedules. This rate structure objec-
25 tive has been established to streamline the rate structure to encompass
26 existing rate schedules, group them by similar service characteristics,
27 and more directly reflect the cost relationship of the customer, demand,
28 and energy components in each rate.

1 There are restraints which prevent the simultaneous accom-
2 plishment of these short-term and long-term goals. The rate structure
3 cannot be realigned and brought to a uniform rate of return in one
4 abrupt change. Even without the restraints that exist in the present
5 rate schedules, it would not be desirable to structure our rates to
6 produce a mathematically uniform rate of return on the basis of one
7 test period. This is true because the equal rates of return would be
8 measured by a historical test period and would not exist when the
9 rates became effective. Changes in rates of return between individual
10 test periods are caused by several changing conditions, including the
11 rate of growth of various customer classes, the types and timing of
12 plant additions and the level of inflation between the test periods.
13 It is not possible to measure the variation of rates of return from
14 a cost study until the rates have been in effect. It is, therefore,
15 desirable to set the rates of return within a reasonable range rather
16 than seeking absolute uniformity on the basis of a past test period.
17 One objective in this application was to distribute the rate increase
18 so as to move all rate classes to within a 10% variation of the
19 average rate of return of the retail class and each remaining active
20 individual rate schedule to within 15% of the retail class average.

21 Another objective was to combine rate schedules wherever
22 possible to move toward the long-term goal of a reduced number
23 of individual rate schedules. In those instances where it
24 was not possible to completely combine the present rates, we have
25 designed the requested rates in such a manner as to result in the

1 movement of a number of customers from the present rates and to admini-
2 stratively freeze the availability of the rate to the remaining
3 customers presently served. This administrative freeze is proposed
4 for certain of the small general service rates to prevent additional
5 customers from being added to the rates.

6 An additional restraint upon the percentage of increase to
7 each individual rate schedule, was the establishment of a range
8 of a minimum of 10% increase and a maximum of 20% among the various
9 rate schedules. In addition, certain rate schedules were admini-
10 stratively frozen in the last general rate proceeding with the
11 anticipation that future increases would be applied in a manner to
12 continue the movement of these customers from the frozen rate to one
13 of the remaining active rate schedules. In keeping with this
14 objective it was concluded that based on the rate of return of
15 the individual rates frozen in the last proceeding, an increase
16 approaching 5% over the average or 20% should be applied to those
17 schedules. This would move the rates of return into a more uniform
18 relationship, and also continue the movement off of the frozen
19 rate schedules.

20 Q. Please explain the changes that have been made in the residential
21 class and in general how these changes comply with the goals you have
22 just discussed.

23 A. We are proposing to combine the three existing residential
24 rate schedules into a single residential schedule. The rate that
25 we are proposing would have a seasonal summer/winter price
26 differential to recognize the difference in characteristics of use
27 between our summer peak period and the remaining non-summer period.

1 This rate form continues the seasonal price differential that was approved
2 by the Commission for one of the residential schedules in our last general
3 -rate case.

4 In combining the residential service it is also proposed to move the
5 basic facility charge near to the total customer cost component of provid-
6 ing the minimum monthly service. This change has been accomplished by a
7 basic facility charge of \$6.50 per month. It is also proposed in the
8 single residential rate to incorporate the effect of the water heater dis-
9 count into the blocks, thus eliminating separate treatment for the water
10 heating service. This has been accomplished by the design of the rate and
11 the pricing of the monthly kilowatt-hour charge. The increase in the
12 minimum monthly basic facility charge to be more in line with the total
13 customer cost and the consolidation of the water heater discount has
14 allowed the rate to be simplified in its rate form and provides a basis
15 for a uniform price per kilowatt-hour in the summer months without any
16 usage blocks and the establishment of a single block in the non-summer
17 months of 800 kilowatt-hours per month.

18 The combined rate form recognizes similar use characteristics that
19 exist in the present rate schedules and provides the same kilowatt-hour
20 pricing for all summer and winter loads, regardless of the nature of the
21 appliance or end use of the service. This recognizes the contribution
22 the winter load has produced on our system and the benefits of the result-
23 ing balanced system load. The reduced non-summer price over 800 kilowatt-
24 hours provides a direct reduction to all winter usage, including electric
25 space heating, which contributes to an improved annual load factor and

1 reduced system operating costs. The single residential rate also
2 simplifies the administration of the rate schedule and provides a
3 benefit to the customer by assuring that he pays a price consistent
4 with all other residential customers.

5 Q. How was the 800 kilowatt-hour block established for billing in the
6 non-summer months?

7 A. The 800 kilowatt-hour block was used to establish a reasonable level
8 for base load electric service including water heating. A study of
9 the average usage in the existing residential rate schedules indicated
10 that the approximate customer base use is 400 kilowatt-hours per month
11 for electric water heating. There is some variation in this usage
12 pattern, but these references were established as a reasonable base
13 usage for the non-summer months and 800 kilowatt-hours had the addi-
14 tional advantage of being an existing block in our present rates with
15 which the customers were familiar. The reasonableness of the 800 kilowatt-
16 hour block is further demonstrated by the fact that the non-summer
17 average use per month of the present water heating service schedule (R-3)
18 was 774 kilowatt-hours during the test period.

19 Q. Why have you proposed a seasonal rate form with a summer/winter price
20 differential?

21 A. The seasonal rate form is recommended to reflect the differential in the
22 summer peak period and to price that service higher than the remaining
23 eight months of the year. This rate form is an extension of the seasonal
24 rate approved for the R-2 residential rate in our most recent



1 general rate case. It is a form of peak-load pricing which reflects
2 the higher cost of providing service during the summer peak period
3 and provides an incentive for the customer to reduce his usage during
4 the peak period. We have continued the use of the four billing months
5 of July through October which were approved in our present seasonal
6 residential rate. These billing months on our system generally reflect
7 the usage of the summer periods June through September which include
8 the month of the summer system peak demand.

9 Q. How was the price differential established between the summer billing
10 months and the non-summer months?

11 A. The price differential that we are requesting is essentially the same
12 level as established by this Commission in our prior R-2 rate schedule.
13 The price difference is approximately 1 cent per kilowatt-hour for the
14 service above 800 kilowatt-hours per month in the billing months of
15 November through June.

16 We are not requesting any larger price differential than that
17 approved in our existing schedules until more data is available on the
18 cost difference of the summer peak season. As the Commission is aware,
19 CP&L is continuing its investigation into peak-load pricing and is
20 conducting research into the cost differential of seasonal service.
21 We would not recommend setting a price difference greater than exists
22 in our present rates until the results of this research and more cost
23 data become available.

24 Q. What is the basis of the \$6.50 basic facilities charge?

1 A. The \$6.50 per month charge was established based on the unit cost
2 analysis of the customer cost in our retail cost allocation study.
3 The actual operating expense related to the customer cost in our
4 test period study was \$6.57 per month for the residential class.

5 The cost reflected in the \$6.50 per month charge includes the
6 monthly meter reading expense, the operation and maintenance
7 expense of the meter, preparation of the monthly bill, and customer
8 accounting expense of maintaining records on the service at each
9 meter location. These expenses do not vary with the amount of
10 service used at the service location during the month.

11 The \$6.50 per month charge is cost related and recovers a major
12 portion of the monthly customer cost. It does not, however, recover
13 the total monthly customer cost. Nothing is included for the return
14 on the investment in the minimum distribution system necessary to
15 connect the customer's service location, the cost of providing the
16 meter, the service riser, the service drop, and the secondary
17 distribution system. These cost components have been included in
18 the monthly energy charges in the rate design.

19 Q. What is the effect on the residential customer class of the rate
20 design that you have just described?

21 A. The rate design that I have presented is included in Schedule RES-1
22 which we are requesting apply to the residential class. The effect
23 on North Carolina residential customers of this requested rate would
24 be to increase the base charges in residential rate schedules by an
25 average of 14.97%. As pointed out earlier, this is an overall

1 increase in base rate charges and does not reflect the offsetting
2 reduction in fuel charges related to increased nuclear generation.
3 The 14.97% is also an overall average for the total residential
4 class. Looking at an average 1000 kilowatt-hour monthly bill, the
5 composite increase on the three residential rates would be 18.89%
6 in the summer billing months and 13.59% in the non-summer months
7 for an overall annualized increase of 15.34%. As shown on Davis
8 Exhibit No. 5, the resulting revenues from the increase in the base
9 rate charges will result in a residential class rate of return of
10 8.510%, which is approximately 10% below the overall retail class
11 average.

12 Q. Would you please describe how the rates for the small general service
13 class are determined?

14 A. Yes. The small general service class presently consists of six rate
15 schedules, including the principal rate presently designated as G-1.
16 Of the remaining five present rates, two, Rural Farm Service and
17 Apartment House Service, were frozen in the last rate case. We propose
18 in this proceeding to freeze the availability of the three remaining
19 separate schedules, two church/school service rates, and the small
20 municipal pumping service. Our request is to withdraw the availability
21 of the present church/school rates, CS-1 and CS-2, and small municipal
22 pumping rate, MP-1, from new customer applications. Instead, new custom-
23 ers would receive service under the proposed new small general service
24 rate SGS-1. It should be noted that the existing customers on the
25 frozen rates would be moved to the standard general service rate as
26 changes occur in their usage patterns and as the rates become more
27 advantageous to their billing.

1 Q. What changes have you included in the small general service rate SGS?

2 A. We have established a basic facilities charge of \$6.50 per month. This
3 is the same charge as in the requested residential rate. The \$6.50
4 charge for the small general service rate does not equal the minimum
5 monthly customer expense but it is a reasonable point to establish
6 the initial monthly charge.

7 We have also modified blocking in the rate as well as simplified
8 the extender provision which relates to the first monthly energy usage
9 block. Our objective was the continuation of the block rate and the
10 extender provision while reducing the complexity of the rate form and
11 simplifying its administration.

12 Q. Please describe the basis of the rates that you are requesting for the
13 large general service class.

14 A. The large general service class presently consists of four rate
15 schedules. The existing rates are general service (G-2), large
16 general service (G-3), guaranteed load factor (GLF), and the
17 shopping center rate (SC) which was frozen in the last rate
18 proceeding. The class formerly included a separate municipal
19 pumping rate (MP-2). It is requested that this rate be withdrawn.
20 Design changes incorporated in the small municipal pumping rate
21 in our last rate proceeding resulted in the successful transfer of
22 all the customers previously served on MP-2 to the MP-1 rate. At
23 the present time there are no customers served on MP-2 because the
24 MP-1 rate produces a slightly more favorable monthly billing. As a
25 result it is requested that the former municipal pumping rate MP-2
26 be withdrawn.



1 The rate requested for the present frozen shopping center rate (SC-1)
2 includes the \$6.50 monthly facility charge as requested for the resi-
3 dential and small general service classes. The kilowatt-hour charge
4 has been adjusted to reflect the revenue increase based on the rate
5 of return and increase objectives.

6 No other changes in rate form are proposed for the remaining
7 general service, large general service and GLF rate schedules other
8 than the changes in the monthly charges necessary to reflect the
9 increased revenue. The rate design and rate formats approved by the
10 Commission in the last general rate case are continued in the new
11 rate design.

12 Q. What changes were made within the lighting classification?

13 A. We are not at the present time requesting any changes in the number
14 of schedules or in the availability of the existing rates. We have
15 included a nearly uniform percentage increase on all the existing
16 charges. There are small variations depending on the application of
17 the rate to a particular lighting fixture, but the overall increase
18 is very near the requested average of 15%. The sports field lighting
19 rate schedule was increased less than the average because of its
20 slightly higher rate of return within the class.

21 Our long-term rate design objectives include an investigation and
22 consolidation of the lighting schedules. A complete review is proposed
23 of the provisions and lighting combinations included in the lighting
24 rates. After this review and on the basis of further study, it may be
25 possible to reduce the number of schedules in future rate proceedings.



1 Q. Have you made any changes to the Riders?

2 A. Yes, we have. We are modifying Rider 15 and introducing a new Rider,
3 two-phase service, No. 41.

4 Q. Would you please discuss these changes?

5 A. The change to Rider 15 involves the upgrading of the fuel cost
6 component used in the formula from a previous level of .4 cents to
7 the level currently utilized in the approved fuel charge or .85 cents.

8 The new Rider 41 is being introduced to eliminate the existing
9 General Service - Small (TW-2) rate schedule under which two customers
10 currently receive service. The TW-2 rate is a carryover from the
11 acquisition of the Tide Water Power Company. You will note that the
12 Rider permits, for these two customers, two-phase service. It should
13 also be noted that the Rider is frozen and available to only those now
14 using two-phase service. We are requesting the withdrawal of the TW-2
15 rate schedule and will bill these customers on the Small General Service
16 (G-1) rate schedule in the future.

17 Q. Have you shown the results of applying the proposed rates to the
18 individual customer classes?

19 Yes, I have. Davis Exhibit No. 5 presents a summary of the results
20 of the cost allocation study indicating the rates of return for the
21 retail classes that would have been realized during the June 30, 1976,
22 test year if the requested rates had been in effect during the entire
23 period. It should be noted that these rates of return are valid only
24 for comparison of relationships among the rates and do not indicate
25 the correct rate of return for jurisdictional ratemaking.

1 Page 1 of Davis Exhibit No. 5 summarizes the rates of return for
2 the retail classes for both the existing rates and the proposed
3 rates. This exhibit also indicates the percent variation of each
4 class from the retail average rate of return. As indicated by this
5 exhibit, the proposed rates would lessen the variation from the retail
6 average for each class with the exception of the large general service
7 classification. All four of our major retail rate classes, including
8 large general service, are within approximately 10% of the retail average
9 rate of return. As stated earlier in my testimony, this improvement
10 in the variation of the rate of return between rate classes was an
11 objective in the design of the requested rates.

12 Q. Were you able to accomplish the objective of bringing each individual
13 rate to within 15% of the retail average rate of return?

14 A. No, not completely. Two of the rate schedules which we are recommending
15 to be continued as active rate schedules indicate rates of return varying
16 slightly more than 15% from the retail average. One rate which is
17 being eliminated and one rate which is being frozen are also slightly
18 outside the established objective on rate of return. Among the total
19 individual rates, improvement in the rate of return relationship was
20 accomplished in 11 of the total 14 active retail rates and in those
21 cases where the variation on rate of return continues to exceed 15%,
22 substantial progress was made in reducing the variation. The two active
23 rates for guaranteed load factor service and sports field lighting
24 service indicate rates of return above the rate design objective, but
25 the variation was reduced substantially in the design of the proposed
26 rates.



1 Q. Would you please comment on the fact that the large general service
2 classification shows a rate of return above the retail average, and
3 that the relationship was not improved in the proposed rates.

4 A. As I indicated earlier, the large general service classification will
5 receive the average rate increase. After application of the proposed rates,
6 the indicated rate of return of the large general service class is 0.6
7 percentage points above the average rate of return. This result is
8 well within 10% of the retail average and is reasonable.

9 Q. How nearly do the proposed rates meet the rate design objectives which
10 you established for this case?

11 Overall, the rates proposed in this proceeding come very close to the
12 rate design objectives that were established. The rate of return of
13 the rate classes has been moved to within approximately 10% of the
14 retail average. In addition, improvement was made in the rate of
15 return relationship in 11 of the 14 individual, active, rate schedules
16 with only two remaining outside the rate of return objective. The
17 number of active schedules has been reduced by the withdrawal of a net
18 of 5 rates and the resulting rate forms substantially streamlined and
19 simplified. A monthly, basic facilities charge based on the customer
20 component of costs has been established in each rate schedule. This
21 charge and other rate design changes have improved the customer, demand,
22 and energy cost relationships reflected in the rates.

23 Q. The retail class cost allocation study you have referred to was accomplished
24 on a system-wide basis. Is this type of study appropriate for use in
25 the North Carolina retail jurisdiction?

26 A. Yes. In my opinion the system-wide study is completely appropriate for
27 use in determining the relative earnings of the various rate classes
28 in the North Carolina jurisdiction.



1 Q. Will you now please describe the monetary effect that the proposed
2 rates would have had on the Company's jurisdictional operation as
3 adjusted had the proposed rate changes been in effect throughout
4 the test period ending June 30, 1976.

5 A. These materials are shown on Davis' Exhibit No. 4 which is the same
6 as Exhibit I filed with the application in this proceeding. Column 2
7 of page 1 of this Exhibit is identical through line 13 with Column 7
8 of Davis' Exhibit No. 1. For convenience it restates the actual
9 operating results with appropriate adjustments apportioned to North
10 Carolina retail operations. Column 3 sets forth the effect of the
11 proposed rates had they been in force throughout the test period. As
12 shown thereon, the additional revenues would have been \$69,238,676.
13 Additional gross receipts tax, state, and federal income taxes arising
14 as a result of these additional revenues would have amounted to \$37,424,443,
15 or 54.05% of the gross revenue increase. The additional net operating
16 income for return would have been \$31,813,233. Thus, with the increase
17 applicable to North Carolina retail sales, the net operating income for
18 return would have been \$131,128,600, as shown on line 13 under Column 4.

19 Q. What else is shown on page 1 of Davis's Exhibit No. 4?

20 A. Lines 14 through 24 show the original cost of net investment consisting
21 of net electric plant in service, plus an allowance for working capital.
22 The total original cost net investment is shown on line 24. The fair
23 value rate base is shown on line 25. The development of the fair value
24 rate base is shown on pages 3 and 4 of Exhibit No. 4. The calculation
25 to determine fair value consisted of a weighting of the original cost
26 net investment as two-thirds and the replacement cost determined by



1 Mr. Julius Breitling of Ebasco Services at one-third. The return on
2 fair value rate base indicated for the test year is shown on line 26 of
3 page 1. As stated there, the apparent return in the test year at the
4 present rates would have been 6.392% and had the proposed rates been
5 in effect for the entire test period, this indicated rate of return
6 would have been 8.439%.

7 Q. You have just stated that the fair value rate base was determined by
8 weighting the original cost at two-thirds and the replacement cost
9 at one-third. Why was this weighting used in this proceeding?

10 A. We have submitted our fair value rate base on the basis of weighting
11 the original cost at two-thirds in order to conform to the fair value
12 allowance approved by the Commission in our prior three rate orders.

13 We would contend that in this time of continuing inflation, that
14 the replacement cost should be weighted more heavily than we have
15 applied in this rate proceeding and would request the Commission to find
16 a higher fair value rate base than we have requested. However, in order
17 to state to the Commission the rates of return on a basis which includes
18 an allowance for fair value comparable to what they have approved in our
19 prior rate order, we have weighted the cost to conform to the Commission
20 formula.

21 Q. What rates of return would have been indicated in the test period for
22 common equity?

23 A. As indicated on page 2 of Davis' Exhibit No. 4, the requested rates
24 would have produced a return of 10% on the fair value common equity
25 component of the rate base. As shown on page 5 of the exhibit, this
26 return on fair value common equity is equivalent to 14.252% return on
27 book common equity.



1 Q. Is it your testimony in this proceeding that CP&L Company will
2 actually realize from the requested rates, a return of 8.439%
3 on fair value rate base and 14.252% on total book equity?
4 A. No, it is not. As indicated in our application and in the
5 testimony of other witnesses, it continues to be our experience
6 that the Company cannot actually earn the rate of return allowed
7 by this Commission on an historical test year basis. The factors
8 of attrition and its traveling companion, inflation, are still at
9 work on the return realized by Carolina Power & Light Company.

10 Even though the test year rate of return computed on a total
11 common equity basis indicates a return of 14.25%, the Company will
12 not have an opportunity to earn that rate of return. The historical
13 test year used in our application is the twelve-month period ending
14 June 30, 1976. Even though we have included adjustments for
15 changes in cost levels and other operating conditions which will
16 occur up through the time of the hearing in this case, it is almost
17 impossible for a past test period to completely reflect all of the
18 changing conditions affecting the rate of return to be realized
19 when the requested rates go into effect. Our calculations confirm
20 that this condition exists in this case and when the rates go into
21 effect the earnings on jurisdictional common equity will be less
22 than 14%.

23 Davis' Exhibit No. 6 shows the anticipated operating results for
24 a test period ending the first quarter of 1977. The purpose of this
25 Exhibit is to show the adjustments that we have included to the

1 historical test period in the context of a full twelve-month
2 period which ends closer to the anticipated date of the hear-
3 ing in this proceeding and closer to the time the requested
4 rates would actually go into effect. This test period of
5 twelve months ending March 31, 1977, consists of six months'
6 actual data and six months' estimated data. As shown on
7 page 4, the indicated return on common equity had the rates
8 been in effect throughout the test period is 13.78%. This return
9 is significantly below the 14.25% shown on the historical test
10 period and indicates clearly the continuing erosion of earnings.

