

**DIRECT TESTIMONY**

Docket # 50-400-403  
Control # 771600181  
Date 6/9/77 of Document:  
REGULATORY DOCKET FILE

**CAROLINA POWER & LIGHT COMPANY**  
Before the  
**NORTH CAROLINA UTILITIES COMMISSION**  
Docket E-2 SUB 297

Application for Increase in Electric Rates



DIRECT TESTIMONY

SHEARON HARRIS

EDWARD G. LILLY, JR.

ROBERT R. NATHAN

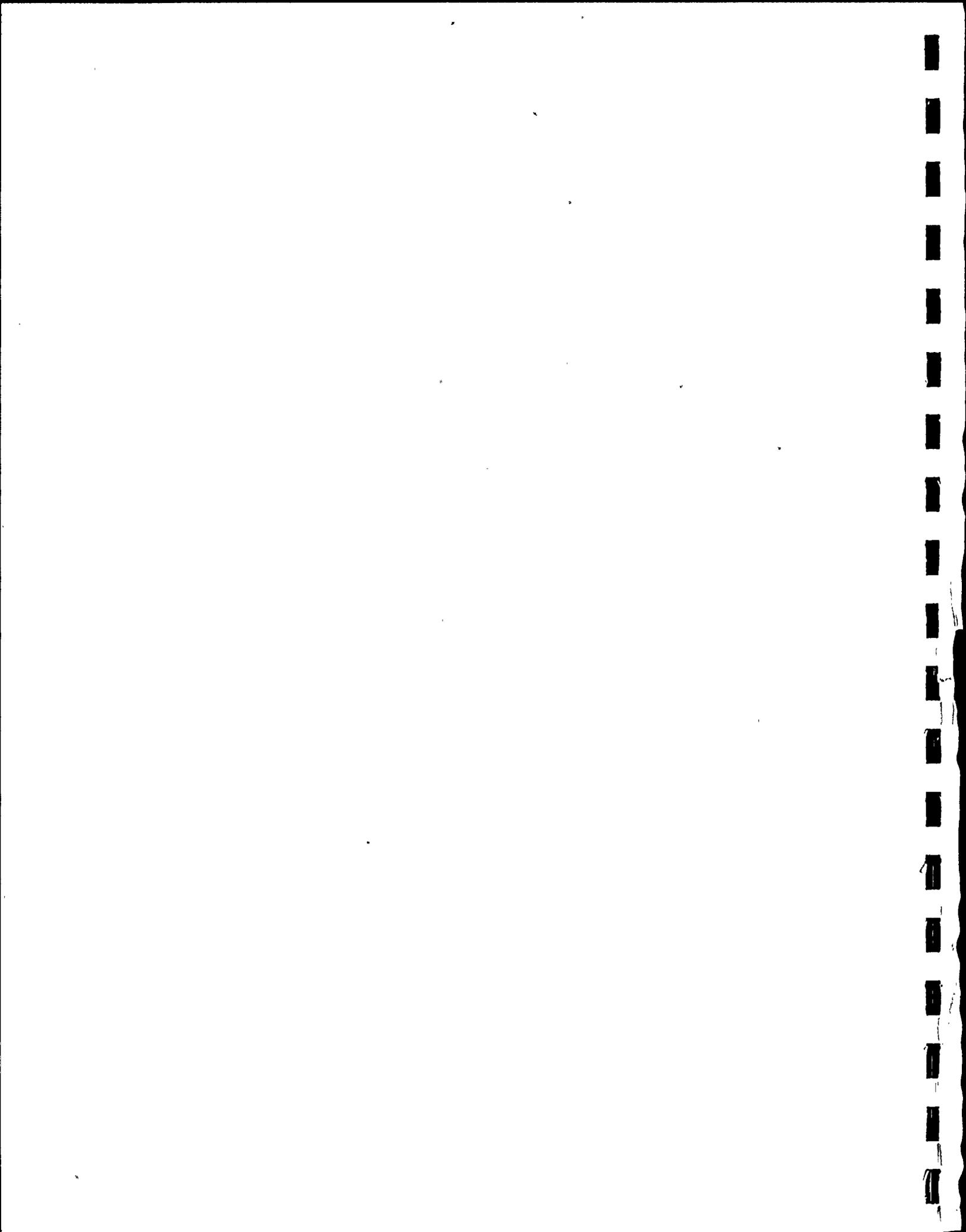
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Filed December 1, 1976



DIRECT TESTIMONY

OF

SHEARON HARRIS

1 Q. Please state your name, address and occupation.

2 A. Shearon Harris. My office address is 336 Fayetteville Street, Raleigh,  
3 North Carolina, and my occupation is Chairman of the Board, President  
4 and Chief Executive Officer of Carolina Power & Light Company (CP&L).

5 Q. How long have you been associated with Carolina Power & Light Company  
6 and what positions have you held with the Company?

7 A. I joined the Company in December of 1957 as Associate General Counsel  
8 and I became a Vice President in 1960. I served as General Counsel  
9 from the latter part of 1962 until May of 1963 at which time I was  
10 elected President. I was designated Chief Executive Officer in  
11 January 1969 and in March of 1970 I was elected Chairman of the  
12 Board.

13 Q. Would you briefly review some of your experience in the utility industry  
14 and in the business community.

15 A. I have served as Chairman of the Edison Electric Institute, which is  
16 the trade association of the investor-owned electric utility industry,  
17 Chairman of the Board of Directors of the National Association of  
18 Electric Companies, Chairman of the Southeast Regional Advisory Committee  
19 of the Federal Power Commission, Chairman of the Executive Advisory  
20 Committee for the 1974 National Power Survey conducted by the Federal  
21 Power Commission and as an officer or active member of various other  
22 industry boards and committees. I am presently serving as Chairman  
23 of the Electric Power Research Institute and serve on the Board of



1 the United States Chamber of Commerce and as a Trustee of the Committee  
2 on Economic Development. I am a member of the Business Council.

3 I currently serve on Advisory Committees of the Federal Energy Adminis-  
4 tration, the Commerce Department and the Energy Research and Development  
5 Administration.

6 Q. Would you describe generally the service area, the operating system  
7 and electric facilities of CP&L.

8 A. CP&L provides electric service at retail and wholesale throughout a  
9 service area of about 30,000 square miles, covering much of central  
10 and eastern North Carolina, the Asheville area, and the northeastern  
11 area of South Carolina. The population of CP&L's service area is  
12 approximately 3,000,000. We serve about 670,000 customers. About  
13 83% of our revenues are from retail service and approximately  
14 85% of total operating revenues are derived from sales in North  
15 Carolina. The Company's present system generating capability is  
16 approximately 6,538,000 kilowatts derived from seven coal fired steam  
17 electric plants, two nuclear units, thirty-three internal combustion  
18 turbine generators and four hydroelectric plants. It is estimated  
19 that during 1976 the Company's generation by energy source will be  
20 68.5% coal, 27.4% nuclear, 2.5% hydro, 1% residual oil and the  
21 remaining fraction of a percent from No. 2 oil. The Company owns  
22 and operates an integrated transmission network and distribution system  
23 throughout the service area, and its facilities are interconnected at  
24 various points with the systems of neighboring utilities in order to  
25 provide for an interchange of power. Our system and operations are



1 more fully described in the 1975 Annual Report, which is presented  
2 here as "CP&L Harris Exhibit No. 1."

3 Q. When was CP&L last granted general retail rate relief for its North  
4 Carolina operations?

5 A. CP&L last filed for a general rate increase on July 15, 1975. The  
6 requested rates were designed to effect an overall increase of about  
7 22% in total charges for retail service in North Carolina, including  
8 the then current charge for fuel. In an order entered on February 20,  
9 1976 this Commission allowed the request in its entirety and noted that,  
10 "the level of returns which are indicated, were the entire rate increase  
11 granted, are below those which were allowed in CP&L's most recent general  
12 rate case, and it must be said that such returns are in the lower portion  
13 of the reasonable range of return."

14 Q. What was the effect of that general rate increase?

15 A. That general rate increase was based upon a test year ending December 31,  
16 1974, adjusted for certain known changes that occurred before the conclusion  
17 of hearings. As pointed out by the Commission in granting the entire  
18 increase requested, the approved rates were not sufficient to provide the  
19 level of returns which had been approved for the Company in its preceding  
20 rate case, which was based upon a 1973 test year. Therefore, we did not  
21 expect that the rates approved in that case would generate sufficient and  
22 adequate revenues to permit the Company to earn a rate of return on its  
23 common equity investment consistent with the rates of return which this  
24 Commission has repeatedly held to be fair and equitable in electric utility  
25 rate cases. The fact was that in filing the case the Company had under-  
26 estimated its revenue requirements. The expected result has followed in



1 that the rate of return on common equity which the Company is earning is  
2 inadequate. On a North Carolina jurisdictional basis, for the 12-month period  
3 ending June 30, 1976, the Company's rate of return on common equity was  
4 10%. The last rate increase has enabled the Company's earnings coverage  
5 of fixed charges to improve from the dangerously low levels of 1974-75.  
6 Also the percent of earnings attributable to allowance for funds used  
7 during construction (AFDC) no longer exceeds 100% as it did at times  
8 during 1975. These are favorable results, but they do not indicate that  
9 the Company's financial condition has improved to a point that can be  
10 considered satisfactory. In order for the Company to meet the future  
11 challenges in raising tremendous sums of capital from outside sources,  
12 and to treat its existing stockholders fairly, the level of return  
13 on its common equity investment must be improved. Without the rate  
14 relief requested here, there will be no improvement. In fact a very  
15 rapid deterioration in earnings, quality of earnings and coverage  
16 of fixed charges will follow. The present level of rates will simply  
17 not sustain our bond rating or permit us to continue the presently  
18 planned construction program.

19 Q. What is the present status of the Company's bond rating?

20 A. In February of 1975 Moody's Investor Services, Inc., one of the nation's  
21 major bond rating agencies, downgraded CP&L's bonds from A to Baa. This  
22 marked the first time in the history of the Company that a major rating  
23 agency had assessed the quality of the Company's securities as below  
24 investment grade. A principal Company objective since that time has been  
25 to reverse its seriously deteriorated financial condition so that this  
26 bond rating could be restored and thereafter maintained. It was hoped that  
27 the last rate case would accomplish this. We feel that it did take us



1 a long way toward accomplishing this objective, and we are en-  
2 couraged with our prospects of having the rating restored by Moody's  
3 at least by the time we next sell first mortgage bonds. To fail to  
4 achieve favorable results in this case, however, would be a tremendous  
5 setback to our efforts to have our credit worthiness restored. It is not  
6 only important that we regain our rating, but that we retain it once it  
7 has been regained.

8 Q. Would you please elaborate on the effects of a lowered bond rating?

9 A. Yes. This was gone into in depth in our last case and I think it  
10 important to again emphasize it here. The consequences of a low bond  
11 rating are far-reaching and continuing. Many financial institutions and  
12 investors are now prohibited by their charters or by established policy  
13 from investing in bonds which are not rated at least A by both major  
14 bond rating agencies. For example, the pension fund for the employees  
15 of the State of North Carolina cannot purchase CP&L bonds as long as  
16 they are rated only A/Baa. Additionally, some institutions are precluded  
17 by law from investing in securities where there is a low earnings  
18 coverage of fixed charges.

19 During 1974 hearings in Docket No. E-2, Sub 229, Company witnesses  
20 predicted many harmful results should the Company's A/A bond rating be  
21 reduced. The results, once this happened, were even more adverse than  
22 then anticipated. At that time, the Company was anticipating a spread  
23 between the cost of marketing A and Baa bonds of about 35 basis points.  
24 In April of 1975, after the downrating of CP&L's bonds in February, the  
25 Company sold \$100 million in first mortgage bonds at a cost to the Company  
26 of 11.24%. The most nearly comparable sale by a company with an A/A  
27 rating was that of Florida Power and Light Company at a cost of 9.08%,

1 216 basis points lower than CP&L was required to pay. The cost spread  
2 between A/A and Baa bonds has narrowed some since that time but continues  
3 to be significant and will undoubtedly widen again in the future. I  
4 testified in 1974 that a Baa rating "is certainly not one which would  
5 attract investor interest in 30 year bonds." When we attempted in April  
6 of 1975 to issue bonds to mature in 30 years, we found that the interest  
7 in such bonds rated lower than A by either of the major rating agencies  
8 was almost nonexistent. Consequently, we had to shorten the maturity  
9 date from the normal 30 years to only nine years.

10 We also pointed out in 1974 that "a lowering of the Company's bond  
11 rating would result in a prompt reduction in the rating of the Company's  
12 preferred stock issues imposing substantially higher costs in raising this  
13 type of capital." This result followed and the Company's preferred stock  
14 was also downgraded by Moody's. In March 1975 the Company sold preference  
15 stock at a cost of 11.2%. This compared to preferred stock sold in the  
16 same period by companies with A ratings for costs in the range of 10.25%  
17 to 10.36%. Our Company was unable to issue preferred stock at that time  
18 because of low earnings coverage of preferred dividends and interest  
19 charges.

20 Lower bond ratings also result in higher costs for short-term  
21 financing. CP&L's commercial paper rating was reduced from Prime 1 to  
22 Prime 2, with a consequent increase in cost, at the same time the  
23 bond rating was reduced by Moody's. To have its securities rated  
24 at below investment grade is exceedingly costly to the Company and  
25 its ratepayers and will continue to be so for as long as this lower  
26 rating is in effect. It is exceedingly important that our bond rating  
27 be maintained at least at the A/A level.



1 Q. Would you please state the objectives of the Company's present rate  
2 filing?

3 A. -A prime objective is to obtain a level of rates which will reflect the  
4 increased cost associated with our Brunswick No. 1 nuclear plant which  
5 is scheduled to become commercially operable in March of 1977. A second  
6 objective is to obtain rates which cover inflationary cost increases which  
7 are not covered in our present rates. A third objective (which cannot  
8 be attained unless the first two are met) is to earn a rate of return  
9 on equity that is just and reasonable. Even without the addition of  
10 Brunswick No. 1 in the rate base, our present rates will not permit an  
11 adequate return on common equity. Once Brunswick No. 1 is included in  
12 the rate base, there will be an immediate and serious devastation of  
13 earnings unless rates are adjusted to cover the additional cost.  
14 When rates are inadequate to fully cover costs, including a  
15 reasonable return on capital, any inflationary increase in operating  
16 costs is felt immediately. This has occurred with CP&L. As has  
17 been pointed out previously, the Commission recognized in its order  
18 of February 20, 1976 that the rates requested and granted in that order  
19 would not permit a rate of return generally considered by the Commission  
20 to be adequate. Since the end of the 1974 test year on which those  
21 rates were based, the cost of living index has increased by 17%.  
22 The cost of meters has increased by 25% and aluminum cable has gone  
23 up 56% since the end of 1974. The 1974 test period was updated in  
24 our last case to include some major cost increases that occurred between  
25 December 31, 1974 and the conclusion of hearings in January 1976. The  
26 addition to the system of the Brunswick No. 2 nuclear unit is an example.



1        However, not all of the inflationary cost increases could be included  
2        and a lot has occurred since that time. It also should be remembered  
3        that about a year and a half will have elapsed from the time the hearings  
4        were closed in our last general rate case, and the date when the rates  
5        requested in this case will most likely become effective.

6 Q.    You mentioned having rates sufficient to cover the additional cost  
7        of the Brunswick No. 1 nuclear unit as being a primary objective.  
8        Would you please explain why this is so important?

9 A.    Yes. A major portion of the increase we are seeking in revenues in  
10       this case is for the increased cost of servicing the additional capital  
11       at work in the Brunswick No. 1 nuclear plant. Approximately 11% of  
12       the increase is attributable directly to this factor. A portion of  
13       this increase should be offset by a decrease in fuel costs. Our requested  
14       increase further reflects inflationary cost increases since our last  
15       general rate case hearings and represents the Company's attempt to  
16       obtain rates that will permit a more reasonable level of return.

17 Q.    Why is it necessary for rates to increase when new large generating  
18       units come into service?

19 A.    Because new large generating plants cost more than the embedded or  
20       average cost of the total plant in service. For instance, the average  
21       cost for all generating facilities on the CP&L system is \$169 per  
22       kilowatt of capacity. The cost of Brunswick No. 1 is \$404 per  
23       KW. Therefore, when it comes on line, the embedded or average cost



1 per kilowatt of generating capacity will increase. Depreciation and  
2 the cost required to service the securities that were sold in order  
3 to construct the plant must be covered in rates.

4 Q. How are these costs you have referred to being covered pending  
5 the commercial operation of the plant?

6 A. As a plant is being constructed there is of course no depreciation  
7 costs. Also, the Company is allowed to accrue allowance for funds  
8 used during construction (AFDC) at an annual rate of 8% of the  
9 capital invested in the incompleated plant. This represents the  
10 cost which the Company must pay for the capital in use during  
11 construction. It is added to the cost of the plant and is recovered  
12 through depreciation once the plant comes into service. AFDC is treated  
13 as income. However, once property becomes commercial, AFDC can no  
14 longer be accrued and depreciation costs must be immediately reflected.  
15 Unless rates are already sufficient to cover these costs, they must be  
16 adjusted immediately; otherwise, earnings can be seriously affected.  
17 The effect of not being able to charge rates for new plant that is in  
18 use is the same as to require a company to furnish the use of property  
19 or equipment to its customers, rent free. No company could stay in  
20 business long if it were required to do that.

21 Q. Has the addition of new plants always required rate increases?

22 A. No. This has been the case for our Company only in this decade.  
23 Until the late 1960's advancing technology made the conversion of  
24 basic fuels to electrical energy increasingly more efficient and  
25 the increasing use of electricity, which we encouraged, made it possible



1 for us to take advantage of economics of scale by building larger and  
2 more efficient facilities; thereby bringing down unit costs. This was  
3 a major reason why CP&L had an almost uninterrupted record of decreasing  
4 rates annually until about 1969. By the late 1960's, however, increases  
5 in costs simply started to outrun the actual and potential advances  
6 in the economics of providing electric service. Later in my testimony  
7 I will give some illustrations of the incredible construction cost increases  
8 that have occurred and are still occurring.

9 Q. Is the situation which you have just described peculiar to CP&L?

10 A. No. What has been true for our Company has been true for the industry  
11 generally. In 1882, electricity from the first commercial system was  
12 priced at about 25¢ per KWH. This was when a quarter was worth much  
13 more than it is today. The average unit cost kept coming down  
14 thereafter for nearly 90 years. By 1969, the nationwide average  
15 price of a residential kilowatt hour of electricity had reached an  
16 all-time low of 2.09¢, only a fraction of the price required in the  
17 early days of the industry. The average price on the CP&L system  
18 was only 1.64¢. The increases in rates which have subsequently  
19 been necessary have been due to a number of causes including dramatic  
20 increases in the cost of fuels and inflation generally. A major cause,  
21 however, has been the increase in the costs of building plants. These  
22 costs have increased much faster than inflation generally. A stretch  
23 out in construction caused by regulatory delays and environmental  
24 requirements are chief reasons for the fact costs of constructing plants  
25 has increased more rapidly than inflation generally.



1 Q. Could CP&L avoid a portion of this rate increase request by simply  
2 delaying the in service date of Brunswick No. 1?

3 A. Any delay would mean that future rates would have to be even higher  
4 than the level of rates necessary to recover the cost of the unit  
5 if it goes on line in March. This is because AFUDC would continue  
6 until the plant is brought on line, therefore increasing the total  
7 cost of the plant. Increased construction costs, and the cost of  
8 having the plant maintained and protected while it was idle, would  
9 further increase the costs which would ultimately have to be recovered.  
10 The important fact is, however, that the plant is needed now. Most  
11 of the reserves which we expect to have next summer will be in the  
12 form of internal combustion turbines. The fuel cost required to run  
13 IC plants is about 7 times higher than the cost of fuel for our nuclear  
14 units. Unless absolutely necessary IC turbines are not used, except  
15 for peaking purposes. By bringing Brunswick No. 1 on line in March  
16 of next year, it can be base loaded and can replace the extremely  
17 high cost generation that might otherwise be required from IC turbines.  
18 It will at times also replace generation from our less efficient coal  
19 fired plants. The average cost of generation on our system by nuclear  
20 energy is about 2.95 mills/KWH as compared with an average cost of  
21 about 10.63 mills per KWH for fossil.

22 Q. Mr. Harris, you have often said that it is cheaper to produce  
23 electricity with nuclear energy. Why is this so if bringing a nuclear  
24 plant on line requires an increase in your rates?

25 A. The explanation is that whenever any major base loaded generating  
26 facility comes on line, whether fossil or nuclear, rates must be adjusted



1 to reflect the increase in cost. While the capital costs of constructing  
2 'nuclear plants is greater, nuclear generated power is less because the cost  
3 of nuclear fuel is much less. All of our studies show that it is  
4 in the interest of our ratepayers for us to construct nuclear plants.  
5 As an example, each of the Brunswick nuclear units will represent a  
6 cost which is approximately \$122 million greater than that for which  
7 a comparable sized coal fired unit without sulfur removal equipment  
8 could have been built. However, due to the difference in cost of uranium  
9 fuel and low sulfur coal, this unit is expected to save our customers  
10 in excess of \$50 million per year throughout its life based on a 70%  
11 capacity factor. When all costs are considered, fuel, operating and  
12 maintenance costs, and capital costs, this plant is expected to  
13 produce energy at an average cost over its lifetime that will be  
14 around 10 mills per kilowatt hour less than the cost of producing  
15 electricity from a comparable fossil unit without the sulfur removal  
16 equipment. If sulfur removal equipment is required, the initial  
17 cost difference between new fossil and nuclear fueled units will be  
18 substantially reduced and nuclear fueled generation will have an  
19 even greater economic advantage. Also with sulfur removal equipment  
20 installed, the overall plant efficiency would drop, fuel and O&M  
21 cost would rise, and the economic advantage of nuclear fueled generation  
22 would be further increased. Projections show that this cost differential  
23 will continue to rise, reaching approximately 24 mills per kilowatt  
24 hour at the bus-bar in 1990 if sulfur removal equipment is required.  
25 Of the two currently viable fuel alternatives that we have, nuclear,  
26 while requiring a larger initial capital investment, is clearly the  
27 most economical when all the costs are considered. It is CP&L's



1 firm opinion that its consumers will benefit greatly as a result  
2 of the Company's decision to construct the Brunswick Plant. Were  
3 the Brunswick No. 1 Plant a fossil plant, it would nevertheless  
4 have cost considerably in excess of the Company's embedded plant  
5 cost and a rate increase would have been necessary. Since there  
6 would have been no corresponding decrease in fuel charges, the cost  
7 to the consumer would have been greater.

8 Q. Does this mean that anytime a new plant is brought on in the future,  
9 the ratepayers can expect an increase?

10 A. As long as the cost of constructing new plants exceeds the  
11 embedded cost of plant already in service, it will be necessary  
12 to have rate adjustments as new plants come on line. Unfortunately,  
13 we do not see any decreases in the cost of constructing generating  
14 facilities within the foreseeable future. In 1971 our Robinson Nuclear  
15 Plant in Hartsville, South Carolina was brought on line at a cost per  
16 kilowatt capacity of \$126.5. The cost of the Brunswick No. 1 nuclear unit  
17 which is such a major part of this rate proceeding is \$404 per KW  
18 capacity. The cost of our Harris Nuclear Plant, scheduled for the  
19 1980's and 1990, is expected to be around \$1100 per KW -- an increase  
20 of close to 10 times over the cost of the Robinson Plant. The increase  
21 in constructing fossil plants has been dramatic also. Two fossil  
22 plants were brought on line at Roxboro, North Carolina in 1966 and  
23 1968 at an average cost of \$84 per KW capacity. A third unit at  
24 the same site became commercial in 1973 at a cost of \$177 per KW,  
25 over twice that much. A fourth unit at this site is now scheduled  
26 for 1980 at an expected cost in excess of \$256 per KW. The estimated

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1 cost of two other fossil units in the planning stages for the early  
2 1980's is in excess of \$565 per KW. Should sulfur removal equipment  
3 be required these costs would increase substantially.

4 The cost of producing electricity from new plants has also been  
5 affected by the increasing cost of the capital required to build the  
6 new plants. In 1951 CP&L issued First Mortgage Bonds with an annual  
7 cost of less than 3%. It was not until 1966 that the Company paid as  
8 much as 5%. By 1970, however, the cost was approaching 9%. In April  
9 of 1975, after the downrating of CP&L's bonds in February of that year,  
10 the Company sold \$100 million in First Mortgage Bonds at a cost to the  
11 Company of 11.24%. Some companies have been required to pay in excess  
12 of 13%. The cost of equity capital has likewise risen. As our common  
13 stock has declined in price in recent years, we have been required to  
14 sell more of it in order to raise the amount of equity capital needed.  
15 Our last four sales of common stock have been below book value.

16 What all of this means is simply that the cost of constructing  
17 facilities has increased tremendously in the last several years and  
18 the cost of servicing the capital which pays for the facilities has  
19 also increased. These factors make rate increases inevitable.

20 Q. Has your stock not increased significantly in value?

21 A. The answer to that question must be governed by your starting reference  
22 point. If you compare our stock's present price of about \$21.00 per  
23 share with its high price of \$52.25 per share attained in 1965,  
24 the answer would be that it has decreased by 60%. If you compare  
25 it with the low point attained in 1974 the answer could be that there  
26 has been a substantial increase. The more accurate answer would be



1 that there has been a significant recovery from the frighteningly  
2 low level of October 1974, but that the recovery in price is far  
3 from full. The stock was selling for 94.2% of its book value at the  
4 end of October, 1976. (Having recently sold three million of the outstanding  
5 shares below book value has depressed book value.) All professional rate  
6 of return witnesses in our past rate cases, including witnesses presented  
7 in opposition to our cases, have agreed that our stock should and must  
8 sell above book value in order to prevent a dilution of shareholder  
9 equity and to enable the Company to finance on reasonable terms.

10 Q. You have mentioned that one of the Company's objectives in seeking  
11 rate relief is to increase the rate of return which it is receiving  
12 upon its common equity. Would you please state why a rate of return  
13 in the amount requested is necessary?

14 A. In the first place, because of inflation and attrition, it is not  
15 possible that the Company will earn the return on common equity which  
16 the rates would produce on a test year basis, adjusted for known  
17 changes prior to the hearing. That return could be realized only if  
18 all things remained equal, and costs did not increase subsequent to  
19 the time the rates become effective. Since under the law the Commission  
20 cannot take into consideration changes that will occur during  
21 the time the rates are actually in effect, to the extent that costs  
22 increase thereafter, the rates will necessarily be inadequate. Our  
23 last two rate cases clearly demonstrate this to be the case. In  
24 our 1973 rate case, we sought rates that would produce on a test  
25 period basis a return on common equity of about 14.6%. All of the



1 requested increase was granted over a year after the filing was made.  
2 At that time the Commission found that the approved rates should  
3 permit CP&L to earn in the range of 12.5% on its actual common equity,  
4 which rate of return the Commission found to be fair and reasonable.  
5 However, because of attrition and a continued high rate of inflation,  
6 not only was it impossible for the Company to earn the 14.6% rate  
7 of return it had requested, but it was also impossible for the Company  
8 to earn in the range of 12.5% which the Commission had found to be  
9 fair and reasonable. In our last case, wherein we sought a rate of  
10 return of 14.9%, the Commission did not even make a finding as  
11 to the rate of return which the allowed rates would be expected to  
12 produce since all the evidence was that the rates would not produce  
13 a rate of return which the Commission generally considered fair  
14 and reasonable. The rate of return we are requesting here is actually  
15 less than the rate requested in the last two cases - cases in which  
16 all the requested increases were allowed. The reason for this is that  
17 our common equity ratio has increased somewhat therefore requiring a somewhat  
18 lesser rate of return on the equity component of our capital structure.

19 It is our firm opinion that a rate of return of 14.25%, which  
20 could be actually earned, is important. Within the next ten years,  
21 our Company will have to spend in excess of \$7 billion to increase  
22 its plant facilities. This amount, which is about three times the  
23 present assets, will not provide enough capacity to enable the Company  
24 to continue its goal of providing a minimum of 12% reserves during



1 certain future years. In other words, the construction program which  
2 requires this huge amount of capital is a "bare bones program" which  
3 cannot be decreased without seriously affecting the quality of service  
4 which customers expect. About \$4.6 billion of the \$7 billion must come from  
5 outside sources. In order to attract outside capital, it is necessary  
6 for the Company to demonstrate that its investors will be allowed  
7 adequate earnings upon the capital which they invest. While interest  
8 rates and the cost of bond financing have decreased somewhat over  
9 the extremely high levels of 1974 and 1975, those costs remain high  
10 and may well increase to their former level, or beyond, during the  
11 period our outside financing will be so tremendous. Equity capital  
12 cannot be attracted on reasonable terms when the equity investor can  
13 obtain near comparable returns on other investments that are not faced  
14 with the challenges or the risks that confront the utility industry  
15 today.

16 Q. Would you elaborate on some of the risks to which you refer?

17 A. A continuing risk which the equity investor must weigh is the uncertainty  
18 of governmental and regulatory action. Delays and changes often involved  
19 in the licensing of generating plants are unpredicable and costly.  
20 Uncertainties relating to environmental requirements, and potential  
21 costs associated with such requirements, constitute risks. The prospect  
22 of legislative action which could substantially delay the ability  
23 of a utility to recover its costs, governmental restrictions on the  
24 types of fuel that can be burned, governmental actions affecting the  
25 costs of mining coal or reprocessing uranium are unpredictable. These  
26 factors necessarily influence investors.



1 Another risk is the deterioration in the quality of earnings.  
2 A 1975 study by Mitchell Hutchins, Inc., a research firm highly respected  
3 in the financial community, indicated that CP&L was the only company  
4 of the 45 major electric utilities where allowance for funds  
5 used during construction exceeded net earnings available for common  
6 stock during the year 1974. This situation resulted from the large  
7 amount of construction work in progress which was not included in  
8 the rate base and therefore upon which the Company could realize no  
9 cash earnings. AFDC actually increased to in excess of 100% of net  
10 earnings available for common stock for the 12 months ending in November  
11 of 1974 and again exceeded 100% of the earnings available for common  
12 stock for the 12 months ending June 30, 1975. Because of rate relief  
13 in 1976, and also a slowing down of our construction program, the  
14 allowance for funds used during construction comprised only 56% of  
15 earnings available for common stock for the 12-month period ending in  
16 September of 1976. Even with this improvement, AFDC continues to comprise  
17 an unreasonably large proportion of total net earnings. In the opinion  
18 of many knowledgeable investors, while earnings resulting from AFDC are  
19 inferior, so long as AFDC does not comprise an unreasonably large  
20 proportion of total net earnings, the overall quality of earnings is  
21 not significantly affected. However, when AFDC comprises as much as  
22 35% proportion of total net earnings or more, we have to say that the  
23 quality of earnings is affected. In the future years, as our construction  
24 program increases, AFDC will increase also. For instance, in 1980 even  
25 with this full rate increase in effect, AFDC will constitute 60% of  
26 earnings available for common equity. Without this proposed increase  
27 in rates, the situation will become even worse.

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1 Q. Has your Company not experienced a slowdown in customer usage and  
2 sales growth?

3 A. Kilowatt-hour sales for the first nine months of this year have shown  
4 an increase of 7.2% over the same period for 1975. Because of a mild  
5 summer, we did not experience a significant increase in our peak demand  
6 over the peak demand of last summer. You will recall that last summer  
7 we experienced a 6% growth in peak demand. It would be fair to say  
8 that growth rate in 1975 and 1976 did not return to the levels which  
9 we had projected. This was mostly due to the slow recovery that has  
10 followed the recession. However, this year's growth in usage has  
11 increased considerably over usage in 1974 and 1975. Our present forecast  
12 expects demand to increase by 6.9% annually during the next 10 years.  
13 The Commission is making its own forecast as directed by the Legislature.  
14 Press releases showing the preliminary forecast made by the Commission  
15 staff indicate that the forecast which the staff is presently considering  
16 does not vary significantly from that of the Company. The only effect  
17 of adopting the staff's forecast would be to make our reserves slightly  
18 more adequate.

19 Q. Will you please review your Company's present construction program,  
20 as it relates to your expected future growth.

21 A. Our construction program which is subject to continuing review is shown  
22 on Harris Exhibit No. 2. In 1975 our construction program underwent  
23 substantial downward revisions and was tailored to the amount of capital  
24 which the Company could reasonably hope to attract, assuming appropriate  
25 rate relief. Based upon present construction plans and the Company's



1 latest load forecast, the Company's generating reserve margin will drop  
2 to 12.5% in 1981, 5.0% in 1982, 6.7% in 1983 and 9.9% in 1984.

3 Q. What is the percentage of reserve capacity which your Company is planning?

4 A. Up until 1974 the Company had a goal of 18% reserves. This was based  
5 upon reserve levels recommended by the Federal Power Commission and  
6 considered adequate by the Company. However, during 1974 it became  
7 evident to the Company that it would be unable to attract adequate  
8 capital to provide these reserve levels. It was, therefore, necessary  
9 to reduce the level of planned reserves from 18% to 12%. We anticipate  
10 no difficulty in meeting this reserve criteria through the year 1981. As  
11 pointed out in my answer to the previous question; however, the Company  
12 will be unable to provide even this minimum reserve level for a number  
13 of years after 1981 if the demand increases at the rate expected.

14 Q. In the last two cases you have testified about the Company's Cost Control-  
15 Earnings Improvement Program. Are these programs continuing?

16 A. Yes, they are. The Company is continuing its long-established commitment  
17 to "frugality". We have just completed our budget reviews for 1977.  
18 Very restrictive budgetary guidelines were imposed upon all departments  
19 and in order for any costs to be budgeted over and above costs for  
20 prior years, it was necessary for department heads to present clear  
21 and convincing evidence that the increased costs are unavoidable.  
22 In instances where the Budget Committee was not absolutely convinced,  
23 the increases were not allowed. I continue to review the filling  
24 of any vacant positions and unless it is demonstrated that the new  
25 employee is absolutely essential in order to assure that the necessary



1 task can be carried forth, the new employee is not employed. We continue  
2 to analyze the performance of the various facets of our Company's  
3 operation and to compare them with those of other companies. If other  
4 companies are out performing CP&L in any area, we find out why. If  
5 any other similarly situated company is doing anything more efficiently  
6 and at less cost than this Company, we want to know about it and can  
7 assure the Commission that we will implement any changes necessary  
8 that might improve our performance even further. Our performance  
9 continues to compare most favorably with other similarly situated  
10 companies.

11 Q. Would you comment on the management audit of your Company that was ordered  
12 by the Commission.

13 A. Yes. My understanding is that the first phase of the audit by Booze,  
14 Allen & Hamilton has been completed or is nearing completion. Of course,  
15 we are not yet privy to the final results but we are confident that  
16 the audit will reveal that we are managing efficiently. We welcomed  
17 the opportunity to be audited and we are cooperating in every possible  
18 way with the auditing team. Even before the Legislature passed the  
19 act which permitted the Commission to order management audits, I had  
20 stated publicly on any number of occasions and testified before this  
21 Commission that we would welcome such an audit.

22 Q. What will the effect be if you are not awarded the rates requested in  
23 this proceeding?

24 A. The level of the earnings of the Company would not only remain significantly  
25 below what the Commission has previously determined to be fair and reasonable,  
26 but would decline sharply, especially upon the commercialization of our  
27 Brunswick No. 1 Nuclear Unit. The financial integrity of our Company  
28 would continue to decline and our construction program, which is at the

1 very most "bare bones" would have to be reviewed immediately. Undoubtedly  
2 we would have to readjust some of our construction schedules or perhaps  
3 abandon completely some of the plants which we are planning to construct.  
4 This would necessitate the early adoption of rules under which we would  
5 reject new loads. Our bond rating would be jeopardized and the cost  
6 of capital to CP&L would be greater than would be the case if we were  
7 collecting appropriate rates. Without any question, unless the Company  
8 receives the rate relief requested in this application, its abilities  
9 to continue to provide efficient service to its customers would ultimately  
10 suffer.



CAROLINA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF EDWARD G. LILLY, JR.

1 Q. Please state your name and business address.

2 A. Edward G. Lilly, Jr., 336 Fayetteville Street, Raleigh, North  
3 Carolina.

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

5 A. I am Senior Vice President-Finance of the Company.

6 Q. Please describe your educational background and business experience.

7 A. I am a graduate of Davidson College where I received a degree of  
8 Bachelor of Science in Economics. I hold a Master of Business  
9 Administration degree in Banking and Finance from the Wharton School  
10 of Finance. I am a graduate of the Executive Program of the University  
11 of North Carolina and I have completed the Irving Trust Company Public  
12 Utility Finance Seminar. I am Vice Chairman of the Finance Section of  
13 the Edison Electric Institute.

14 From 1952 to 1971 I was associated with Wachovia Bank and Trust  
15 Company, where I held various positions which were related principally  
16 to financial analysis, handling loans for corporate customers and  
17 administration. From 1963 to 1970 I served as Senior Vice President  
18 and Office Executive of Wachovia's banks in the Durham area. During  
19 1970-1971 I served as Manager of the Investment Services Department  
20 at Wachovia's headquarters in Winston-Salem. In March 1971, I became  
21 associated with Carolina Power & Light Company as Senior Vice  
22 President-Finance.

1 Q. Please describe your duties as Senior Vice President-Finance of  
2 Carolina Power & Light Company.

3 A. I am the senior financial officer of the Company and as such I am  
4 responsible for the long-term and short-term financing programs  
5 of the Company. I have responsibility for planning and implementing  
6 the issuance, sale and servicing of first mortgage bonds, preferred  
7 stock, common stock and any other securities issued by the Company,  
8 as well as short-term financing arrangements of the Company including  
9 the negotiation of bank loans and commercial paper. In addition,  
10 I am responsible for developing and maintaining the Company's  
11 investor relations program with the financial community. I have  
12 overall responsibility for the treasury, accounting, computer services,  
13 purchasing and internal auditing functions of the Company, including  
14 preparation of budgets and forecasts and all financial statements  
15 issued by the Company. My responsibility also includes the manage-  
16 ment of Company funds to insure that the Company has available at  
17 all times sufficient cash to pay its expenses of operation and to  
18 meet its payments for construction work.

19 Q. Please state the nature and scope of the testimony which you will  
20 offer.

21 A. This testimony relates principally to the need for the Company to  
22 attract substantial amounts of capital in order to obtain the funds  
23 necessary to meet the challenge of constructing sufficient generating  
24 and other necessary facilities to meet the needs of its customers.



1 Such capital can be attracted on a reasonable cost basis only if  
2 the Company earns a just and reasonable return on common equity,  
3 if rates are allowed in a sufficient amount to cover the increased  
4 cost of the capital invested in the Company's Brunswick No. 1  
5 nuclear unit, which is to be placed in commercial service during  
6 the spring of 1977, and if rates are allowed which are sufficient  
7 to cover other cost increases which have occurred since the Company's  
8 present rates were placed in effect.

9 Q. Will you please explain the Company's financing plans?

10 A. Despite the emphasis on energy conservation which has been stressed  
11 by the Company for a period of years, the electric energy demands  
12 of our service area continue to grow to such an extent that the  
13 Company's planned construction expenditures for the next 10 years  
14 will amount to approximately \$7.1 billion. We anticipate that more  
15 than \$4.6 billion of this amount must be financed through the  
16 attraction of new capital to the Company from the sale of securities  
17 in the financial market, an amount unprecedented in the history of  
18 Carolina Power & Light Company. The impact of this program is brought  
19 into focus by comparing the additional \$7.1 billion plant investment  
20 with the Company's net plant account of \$2.2 billion at year end  
21 1975. Looking to the immediate future, the Company's construction  
22 expenditures for the years 1977 through 1981 are expected to amount  
23 to \$2.5 billion. This represents one of the larger percentage  
24 increases of plant by any major electric utility in the United States.



1           Of the five-year construction budget of \$2.5 billion, the  
2 Company must raise more than \$1.3 billion by the attraction of  
3 additional capital to the Company. These funds can be obtained  
4 only through the sale of the Company's securities to willing  
5 investors in the open market. The Company now has about 92,000  
6 shareholders. Over 39,000 of them, or approximately 42%, are  
7 located in the Carolinas. We cannot expect investors to continue  
8 to invest their savings in our Company unless we can earn an adequate  
9 rate of return on such investment and provide satisfactory dividends.

10 Q. How does the Company plan to secure funds to meet its construction  
11 program for the years 1977-1979?

12 A. A portion of the required funds will come from retained earnings,  
13 charges to depreciation and deferred income taxes. However, more  
14 than \$480 million must be obtained by the sale of additional  
15 securities of the Company.

16           During the years 1977-1981, the Company will need to sell  
17 substantial additional amounts of securities. The timing and types  
18 of securities sold will be influenced by the ability of the Company  
19 to meet coverage ratio tests and maintain a reasonable capital  
20 structure, as well as the conditions of the securities markets during  
21 those years. One of the major problems facing the Company is the  
22 need for continued sales of common stock, which the Company needs to  
23 sell at prices above book value.



1 Q. What, if any, other problems do you feel the Company faces in  
2 carrying out this financing program?

3 A. Historically, the Company has raised capital for its construction  
4 program through the sale of first mortgage bonds, preferred stock  
5 and common stock. Let me examine briefly the current situation  
6 relative to the Company's ability to issue such types of securities.

7 First Mortgage Bonds

8 Table I listed below shows the average cost of outstanding  
9 bonds at the end of each of the past ten years. As recently as  
10 December 31, 1970, the average cost of all bonds outstanding was  
11 5.64%. This average cost has increased with the sale of each issue  
12 of bonds by the Company and had reached 7.72% by year end 1975, an  
13 increase of 37% during the five-year period.

14 TABLE I

15		End of Year Embedded Cost
16	<u>Year</u>	<u>All Bonds</u>
17	1966	4.04
18	1967	4.40
19	1968	4.72
20	1969	4.72
21	1970	5.64
22	1971	6.14
23	1972	6.40
24	1973	6.77
25	1974	7.29
26	1975	7.72

1           The ability of the Company to acquire capital through the  
2           sale of first mortgage bonds at a competitive interest rate is  
3           principally determined by the rating which the first mortgage  
4           bonds of the Company are assigned by the major bond rating  
5           agencies. As a result of declining earnings and thus declining  
6           fixed charge coverage ratios, the first mortgage bonds of the  
7           Company were downrated during 1971 by both of the major rating  
8           agencies from AA to A. Fixed charge coverage ratios declined  
9           further during 1973 and 1974 and by December 1974 had dropped to  
10          the dangerously low level of 1.92 times. Moody's commented that  
11          "despite \$61.5 million of rate relief that was in effect for part  
12          of 1974, coverage of fixed charges and preferred dividends has  
13          declined to unsatisfactory levels." Moody's, thus, reduced the  
14          rating on the Company's first mortgage bonds to Baa, further  
15          aggravating the ability of the Company to raise needed capital.

16    Q.   What effect has the reduction of the rating on the Company's bonds  
17          from A/A to Baa/A had upon the Company?

18    A.   The reduction of the rating on the Company's first mortgage bonds  
19          to Baa/A has had several major negative effects upon the Company.  
20          The reduction in rating requires that the Company pay a substantially  
21          higher cost in order to sell its bonds. In April 1975, after the  
22          downgrading of CP&L's bonds, the Company sold \$100,000,000 first  
23          mortgage bonds at a cost to the Company of 11.24%. The next sale  
24          of a comparable size issue with a comparable maturity by an electric

1 utility company with an A/A rating occurred a short time later  
2 when Florida Power & Light Company sold \$100,000,000 of first  
3 mortgage bonds at a cost of 9.08%, 216 basis points lower than  
4 the cost CP&L was required to pay. While the difference in cost  
5 between a Baa/A and an A/A bond will vary, it is expected that  
6 the cost differential generally will be substantial. On July 20,  
7 1976, Ohio Edison sold first mortgage bonds with an A/A rating  
8 at a cost of 9.55%, while on the next day, Detroit Edison offered  
9 a smaller issue of Baa/BBB first mortgage bonds with a similar  
10 maturity at a cost to the company of 10.78%. Thus, it can be seen  
11 that during the past year the sale of bonds with a rating below  
12 that of investment grade (below A/A) continues to result in a  
13 heavy financial burden to customers of the Company.

14 A reduction in bond rating also eliminates certain sources of  
15 funds to the Company; that is, many institutional investors and  
16 large individual investors, as a matter of policy or of legal limi-  
17 tation, will not purchase a bond with a rating below A/A--for  
18 example, pension funds for the employees of the State of North  
19 Carolina may no longer be invested in bonds presently being offered  
20 by CP&L. Such restrictions of the market in which the bonds of the  
21 Company are sold increase greatly the difficulty of marketing the  
22 Company's bonds at a reasonable interest rate.





1           Here again, it is noted that as recently as December 31,  
2           1970, the average cost of preferred stock was 6.45%. As of  
3           December 31, 1975, this cost had increased to 8.06%, an increase  
4           of 25%. We have not marketed any preferred stock since February,  
5           1974, principally due to insufficient coverage and the reduction  
6           in rating of CP&L preferred stock from A to Baa by Moody's Investors  
7           Service in the first quarter of 1975. In March of 1975, the Company  
8           sold preference stock at a cost of 11.2%. This compared to preferred  
9           stock sold in the same period by companies with A ratings for costs  
10          in the range of 10.25% to 10.36%. CP&L was unable to issue preferred  
11          stock at that time since the Company's level of earnings was so low  
12          that the Charter provision requiring reasonable coverage of preferred  
13          dividends and interest charges was not met. Thus, the Company was  
14          precluded from issuing preferred stock and thus had to resort to  
15          the issuance of preference stock, a junior security, which resulted  
16          in a higher cost to the Company.

17          Common Stock

- 18          Q. Please comment upon the common equity ratio of the Company.
- 19          A. It is vitally important that the Company be able to sell common  
20          stock successfully. Common stock is the foundation upon which senior  
21          capital financing rests. The bond holder and other senior capital  
22          holders look to an adequate common stock equity base for protection  
23          of their investments. Thus, the common equity ratio of the Company  
24          is extremely important in determining the Company's continued ability



1 to sell senior securities. The goal of the Company is to maintain  
2 a minimum common equity ratio of approximately 35%. The long-term  
3 financing plans of the Company are designed to achieve this goal.

4 Q. Does the Company experience any significant difficulties in attract-  
5 ing common equity?

6 A. During 1965, the common stock of CP&L sold at \$52 per share. During  
7 late 1974, the common stock of the Company sold below \$11 per share  
8 or at less than 50% of book value. Table III shows the relationship  
9 of the sales price of common stock to the book value per share for  
10 the last five sales of common equity by the Company.

11  
12 TABLE III .

13  
14

15	<u>Date of Sale</u>	<u>Number Of Shares</u>	<u>Net Price Per Share</u>	<u>Book Value</u>	<u>Percentage Above or Below Book Value</u>
16	11/9/72	2,500,000	28.05	21.16	32.6
17	11/15/73	3,000,000	20.31	23.25	(12.6)
18	1/16/75	4,000,000	14.00	23.25	(40.0)
19	10/28/75	5,000,000	17.215	22.75	(24.3)
20	10/13/76	3,000,000	21.65	22.89	(5.4)

21 The rapid and sharp reduction from the ability to sell common  
22 equity at more than book value to the necessity to sell at prices  
23 substantially under book value is having a severe impact upon the  
24 ability of the Company to attract common equity on any reasonable basis.



1           When the stock of a company is selling below book value, a  
2 greater number of shares is required to be issued in order to obtain  
3 a given amount of equity capital. This action results in additional  
4 dilution in the existing shareholder's equity and a dilution in his  
5 future earnings per share. Such action further depresses the market  
6 price of the existing stock, thereby increasing the cost of equity  
7 and debt financing to the Company and making it even more difficult  
8 for a company to finance on any reasonable basis.

9           For a company that requires additional equity capital through  
10 the sale of new common stock, it is generally considered desirable  
11 that the market price of the stock be above book value by at least  
12 20 percent. This is required because the announcement of a sale  
13 usually results in a downward market pressure on the stock price,  
14 reflecting expected earnings per share dilution. In addition,  
15 between the time of announcement and time of sale, there needs to  
16 be some cushion to protect against market declines caused by factors  
17 unrelated to the company itself. For example, such factors could  
18 include hostilities in different parts of the world, announcements  
19 relating to the economy in general, political moves or changes  
20 in this country or in other countries. Also, the cost of doing  
21 the financing itself; i.e., the underwriting spread and the  
22 payment of legal and accounting expenses in connection with a stock  
23 issue reduce the net proceeds to the company. As I recall, even



1 expert rate of return witnesses for intervenors in past cases  
2 who have protested rate increases have agreed that it is  
3 desirable for a company's stock to sell above book value.

4 Q. Has not the market price of CP&L common stock improved within  
5 the last year or so?

6 A. The market price of CP&L stock has improved from the severely  
7 depressed levels of 1974 and 1975 when, at times, the stock was  
8 selling at approximately 50% of book value. The fact remains,  
9 however, that the stock of the Company still is selling below  
10 book value. As illustrated in Table III, it was necessary for  
11 the Company again to sell common stock below book value in  
12 October 1976.

13 Q. Please comment upon the effect upon the Company and its customers  
14 of placing the Brunswick No. 1 nuclear unit in commercial  
15 operation.

16 A. There are a number of immediate effects upon the Company and  
17 its customers of placing this nuclear unit in commercial opera-  
18 tion. First, the customers of the Company will receive an  
19 immediate benefit from the lower cost nuclear fuel burned by  
20 the plant. Without any additional action by regulatory  
21 authorities, the cost of electric energy would be reduced since  
22 the Company would be "passing through" to its customers



1 lower fuel costs without recovering a just and reasonable return  
2 on the capital invested in the plant.

3 In addition, the Brunswick No. 1 unit will provide substantial  
4 additional low fuel cost generation, thus limiting substantially the  
5 need for the Company to operate high fuel cost generating units,  
6 such as older, lesser efficient, fossil plants and smaller internal  
7 combustion turbine units where the fuel cost for No. 2 fuel oil is  
8 many times the cost of nuclear fuel.

9 The placing of the plant in service also will eliminate the  
10 accrual of allowance for funds used during construction, thus  
11 immediately reducing the reported earnings of the Company. Basic  
12 operating costs of the unit, which, during test operation, had been  
13 capitalized, now are charged as an expense of the Company, again  
14 affecting reported earnings.

15 During the construction period, there, of course, were no depre-  
16 ciation charges made to the property. However, when the Brunswick  
17 No. 1 unit becomes commercial, depreciation charges will begin and  
18 the resulting change will be reflected in reduced reported earnings  
19 of the Company.

20 Q. What effect will the above changes caused by placing the Brunswick  
21 No. 1 nuclear unit in commercial service have upon the financial  
22 condition of the Company?

23 A. Unless rates are promptly increased to allow the Company to earn a  
24 just and reasonable return on the capital invested in the Brunswick



1 No. 1 nuclear unit, the financial condition of the Company will  
2 be immediately adversely affected.

3 The reduction in reported earnings as outlined above will  
4 cause earnings per share, the return on common equity and fixed  
5 charge coverage all to decline substantially. Such declines would  
6 eliminate the opportunity of the Company to re-earn its A bond  
7 rating from Moody's and would place the Company in the position of  
8 risking possible downgrading of the bond rating by other major  
9 rating agencies.

10 Such adverse changes in the Company's financial condition would  
11 impair the Company's ability to raise capital on any reasonable  
12 basis and would require an immediate reappraisal of the Company's  
13 construction program.

14 Q. What is the perception of investors toward CP&L's ability to obtain  
15 increased rates to cover the reasonable cost of capital invested in  
16 the Brunswick No. 1 nuclear unit?

17 A. In my opinion, the inability of the Company to obtain rates sufficient  
18 to provide a reasonable return on capital invested in this nuclear  
19 unit would be perceived promptly and would register most negatively  
20 upon informed investors. In reviewing information supplied to  
21 investors by research analysts, one must be aware of the increasing  
22 emphasis which is placed upon prompt and responsible action by  
23 regulatory authorities. The lack of a prompt increase in rates would  
24 cause investors to immediately reappraise their willingness to



1       commit investment funds to CP&L. Today, investors interpret the  
2       promptness and effectiveness of regulatory action as one of the  
3       most critical elements in a company's ability to remain financially  
4       viable. Without a belief that the Company will have an opportunity  
5       to earn a reasonable and just rate upon capital invested, investors  
6       will merely move their funds to companies which, in their opinion,  
7       provide a more realistic return.

8       Q. You indicated earlier in your testimony that the Company needs to  
9       earn a larger return on equity. Please discuss the need for a higher  
10       return on common equity.

11      A. In the rate case which the Company filed in 1973, we sought a return  
12       on common equity of about 14.6%. In early 1975, the Commission Order  
13       allowed the full amount of the rates requested by the Company. How-  
14       ever, since the 14.6% return on common equity was calculated on the  
15       "test year", the Commission found that the approved rates should  
16       permit the Company to earn a return of approximately 12.5%. However,  
17       as a result of continued inflation and attrition, it was not possible  
18       for the Company to earn even the 12.5% return on common equity which  
19       the Commission found to be reasonable.

20               Inflation and attrition are continuing and, thus, the Company  
21       has not been able to earn a satisfactory return on common equity.  
22       For the 12 months ended October 1976, the return on common equity was  
23       only 11.6%, well below the amount found to be just and reasonable by  
24       this Commission.



1           As the Company faces major construction expenditures in excess  
2 of \$7 billion during the next 10 years with approximately \$4.6  
3 billion of this capital to be attracted from outside of the Company,  
4 it simply is not realistic to expect investors to be willing to  
5 commit their funds to a company which is not earning a satisfactory  
6 return on common equity. The risks of such an investment simply are  
7 too great for the investor to bear. Dr. Langum's testimony supports  
8 the need for the Company to earn a 14.25% return on common equity  
9 in order to remain competitive in financial markets.

10           While Mr. Harris has outlined the risks which an investor assumes  
11 upon making an investment in an electric utility equity, there is one  
12 risk upon which I should like to comment further.

13           The substantial percentage of the earnings of the Company which  
14 result from allowance for funds used during construction has had and  
15 continues to have a serious adverse impact upon the securities of  
16 the Company in the financial markets.

17           While the Company has recovered to some extent from the critical  
18 situation during the year 1974 when allowance for funds used during  
19 construction actually exceeded the total net income of the Company  
20 available for common stock, allowance for funds still exceeds more  
21 than 50% of the Company's net income available for common stock.  
22 Regardless of the current accounting treatment of allowance for funds  
23 used during construction as "nonoperating income" the amounts are  
24 not revenues received from the sale of electricity. Thus, when

1 allowance for funds used during construction is excluded from  
2 various calculations used by informed investors, the financial  
3 condition of the Company appears substantially weaker than is  
4 reasonable for a company which needs to attract such substantial  
5 amounts of outside capital. During the test year ended June 30,  
6 1976, construction work in progress amounted to approximately  
7 \$725 million or roughly 48% of the Company's net plant in service.  
8 Thus, for every dollar of net investment of plant in service, the  
9 Company had approximately 48 cents invested in construction work  
10 in progress upon which it does not receive any cash earnings.  
11 Such a condition is extremely alarming to a potential investor.

12 Q. Please summarize the factors to which you have testified which  
13 cause, or may cause, difficulty in attracting capital to meet the  
14 Company's construction expenditures.

15 A. While the financial condition of the Company has improved somewhat  
16 from the extremely dangerous financial position of late 1974 and  
17 early 1975, the rate of return on common equity is still unsatisfactory  
18 if the Company expects to attract substantial amounts of capital at  
19 reasonable cost.

20 It is imperative that additional rate increases be allowed which  
21 will allow the Company to earn a return on common equity which will  
22 allow the attraction of capital on a competitive cost basis.

23 The awarding of rates sought in this case to allow a just and  
24 reasonable return on the capital invested in the Company's Brunswick

1 No. 1 nuclear unit is also imperative. Without the ability to  
2 earn a return on such invested capital, the financial condition  
3 of the Company would deteriorate most rapidly and result in the  
4 inability to acquire capital on any reasonable cost basis. Such  
5 a condition would necessitate a review of the Company's planned  
6 construction expenditures.

7 The improvement in the return on equity capital and the  
8 earning of a reasonable rate on the capital invested in the  
9 Brunswick No. 1 unit are necessary for the Company to regain and  
10 hold a satisfactory bond rating. A minimum rating of A for the  
11 Company's senior securities is necessary in order for the Company  
12 to be competitive in the capital markets.

RRN | A

ROBERT R. NATHAN ASSOCIATES, INC.

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North Carolina Utilities  
Commission  
Docket No. E-2, Sub 297

DIRECT TESTIMONY  
OF  
ROBERT R. NATHAN

before the  
North Carolina Utilities Commission

Carolina Power and Light Company

November 30, 1976.

TESTIMONY  
OF  
ROBERT R. NATHAN

I. Identification and Qualifications

Q. Please state your name and address.

A. My name is Robert R. Nathan and my office address is  
1200 18th Street, N.W., Washington, D.C. 20036.

Q. What is your profession and position?

A. I am an economist and the president of Robert R. Nathan  
Associates, Inc., a firm of consulting economists.

Q. Please describe your educational background.

A. I received the degrees of Bachelor of Science in Economics  
in 1931 and Master of Science in Economics in 1933 from  
the Wharton School of Finance and Commerce of the Uni-  
versity of Pennsylvania. I received an LL.B from  
Georgetown University in 1938 and an LL.D. honorary  
degree from Georgetown University in 1972.

Q. Please describe your professional experience.

A. I have been engaged in economic research and in the  
formulation and evaluation of economic policies in the  
service of the U.S. Government and in private practice  
for over 40 years.

In the U.S. Department of Commerce in 1933-34 I  
worked on the preparation of the first official national  
income studies in the United States, and for some years  
thereafter I was Chief of the National Income Division.

Starting in 1940, I served on the staff of several agencies planning and administering defense and war mobilization. I was Chairman of the Planning Committee of the Production Board. Later I was Deputy Director of the Office of War Mobilization and Reconversion.

During the 30 years I have been president of our firm, we have served as economic consultants to the U.S. Government and to governments abroad, to states and cities, to international organizations, to private corporations, trade associations, labor organizations and other entities on a great variety of economic matters. We have been retained by the United Nations and the Organization of American States, the World Bank, the Inter-American Development Bank, and the Asian Development Bank. The foreign countries in which we have served as economic planning and policy advisers include Afghanistan, Bangladesh, Bolivia, Brazil, Burma, Columbia, Costa Rica, El Salvador, France, Ghana, Guyana, Honduras, Indonesia, Iran, Israel, Korea, Malaysia, Nepal, Nicaragua, Nigeria, the Philippines, Taiwan, Thailand, Venezuela, Vietnam, and Western Samoa. The firm has worked for the Commonwealth of Puerto Rico over a period of many years, and for the Northern Mariana Islands and the Trust Territory of the Pacific Islands.

We have conducted analytical and policy studies for scores of American corporations, trade unions and nonprofit organizations; for Government agencies, including the Departments of Justice, Defense, Commerce, Interior, Labor, Agriculture, Health, Education and Welfare, as well as the Agency for International Development, the Economic Development Administration, the Office of Economic Opportunity, and the Bureau of the Budget; for regional development agencies, such as



the Appalachian and Coastal Plains Regional Commissions; and for states and cities of the United States, including Connecticut, New Jersey, New York, Pennsylvania, Ohio, Wisconsin, Washington, District of Columbia, Philadelphia, Baltimore, the Port of New Orleans Authority, and the Port of New York Authority.

Q. Have you prepared analyses for, or testified before, regulatory bodies?

A. We have undertaken economic analyses relating to rates of return for many clients. I have testified in rate hearings before such regulatory bodies as the Federal Communications Commission and the Price Commission on behalf of the American Telephone and Telegraph Company; the Federal Power Commission on behalf of the Dayton Power and Light Company; the California Public Utilities Commission on behalf of the Pacific Telephone and Telegraph Company; the Louisiana, Mississippi, Tennessee, Alabama, and Kentucky Public Service Commissions on behalf of South Central Bell Telephone; the Illinois Commerce Commission on behalf of Commonwealth Edison Company; the Federal Power Commission on behalf of Panhandle Eastern Pipeline Company, Columbia Gas Transmission Company and other clients; the South Carolina Public Service Commission and the North Carolina Utilities Commission and the Federal Power Commission on behalf of the Carolina Power and Light Company; the District of Columbia Public Service Commission and Maryland Public Service Commission on behalf of the Potomac Electric Power Company; the Nevada Public Utilities Commission on behalf of Southwest Gas Corporation; the Florida Public Utilities Commission, the Georgia Public Service Commission and the North Carolina Utilities Commission on behalf of Southern Bell Telephone Company; the New York Public Service Commission on behalf of New York Telephone; the Public Service Commission of West Virginia on behalf of



the Chesapeake and Potomac Telephone Company of West Virginia; the Public Service Commission of Maryland on behalf of the Chesapeake, and Potomac Telephone Company of Maryland, the Michigan Public Service Commission on behalf of Michigan Bell Telephone Company; the Massachusetts Department of Public Utilities on behalf of the Boston Edison Company; the Public Utilities Commission of Ohio on behalf of the East Ohio Gas Company and the Dayton Power and Light Company; and the State of New Jersey Board of Public Utility Commissioners on behalf of the New Jersey Bell Telephone Company and on behalf of the Public Service Electric and Gas Company of the State of New Jersey.. I testified before the Civil Aeronautics Board in Phase 8 of the Domestic Passenger Fare Investigation on behalf of the major airlines, before the Federal Communications Commission on behalf of the Department of Defense concerning Western Union services, and before the Federal Maritime Commission on behalf of the Department of Defense and the Military Sealift Command in a transportation rate case.

Also, my associates and I have prepared analyses relating to a substantial number of applications for certificates of convenience and necessity before the CAB and other regulatory agencies. In most of these cases I have appeared as an expert witness. In addition, I have conducted studies and testified in cases involving mergers, triple-damage actions in antitrust proceedings, damage claims in contract suits, and in numerous Indian claims cases.

I have appeared as an expert witness in many administrative proceedings before the Federal Energy Administration, the Federal Power Commission, the



Federal Communications Commission, the Interstate Commerce Commission, the Civil Aeronautics Board, the Maritime Administration, the Federal Maritime Commission, the Federal Trade Commission, the U.S. Court of Claims, the Indian Claims Commission, and the United States International Trade Commission (formerly the United States Tariff Commission).

Q. Have you other relevant experience in economics and related fields?

A. I have written widely in the field of economic policy. I am the author of National Income of the United States, 1929-35 (Washington, D.C.: U.S. Government Printing Office, 1936), Mobilizing for Abundance (New York: McGraw-Hill 1944), National Wage Policy for 1947, and National Economic Policy for 1949. I have had many articles published in professional journals and have presented testimony on numerous occasions before congressional committees on taxation, fiscal policies, competitive practices, foreign economic relations, energy, and other economic policy issues.

I am a Fellow of the American Statistical Association and was a vice president in 1940. I am a member of the American Economic Association; the Council on Foreign Relations, and the Society for International Development. I was a member of the National Commission on Money and Credit, which completed a comprehensive 3-year study of America's money, credit, and fiscal system. I am a Trustee of the Committee for Economic Development and member of its Research and Policy Committee, a member of the Board of Trustees of the Asia Society, and former vice president of the National Economists Club. I am a member and trustee of the National Academy of Public Administration. I am a member of the Board of Overseers of the Wharton School of Finance and Commerce

and an Associate Trustee of the University of Pennsylvania, a member of Time Magazine's Board of Economists, a member of the Board of Advisers of Volvo, and a director of several corporations.

## II. Purpose and Content of Testimony

- Q. On what subject have you been requested to testify in this proceeding?
- A. I have been asked to prepare general economic testimony to accompany the filing of the Carolina Power and Light Company (CP&L) with the North Carolina Utilities Commission relevant to the Company's request for increased rates for the sale of electric power. I will review the more pronounced economic developments that have taken place in the recent past, with emphasis on those having the most impact on the needs of the Company for increased rates. I will identify and analyze the past, current, and prospective economic trends which, I believe, have necessitated this filing and which will necessitate consideration of the ongoing attrition of earnings. I will focus on recent and prospective changes in inflation rates and on the nature of the present economic recovery from the nation's worst recession since World War II. I will describe how these developments will influence the Company's requirements for expanded facilities and the related financial resources.

The exhibit of charts and tables accompanying my testimony was prepared under my direction and supervision. Figures used in preparing each chart are presented in the table following the chart. Also, statistics in individual charts and tables have generally been converted to index form to facilitate comparisons among the various series of data presented in the different exhibits.



### III. Economic Growth and the Demand for Electric Power

- Q. What do you see as the trend in electric power demand given the present outlook on the economy?
- A. As the United States expands in population and economic activity, consumption of electric power will surely continue to grow. The growth in consumption will require, over time, more electric power generation, transmission, and distribution facilities. Historically, the demand for electric power has outpaced the expansion of the general economy. This has been true for the country as a whole, and for the Carolina Power and Light Company in North Carolina, as can be seen in chart 1.

The tendency for the long-run trend in electric power consumption to grow more rapidly than economic activity is attributable to several factors. Most important among them is the role of electric power in improving productivity and modernizing our society. The importance of this role becomes most dramatically obvious when one observes nations and regions where limited supplies of electricity are available. My associates and I have worked in over 30 of the less developed countries in the last quarter of a century and have observed everywhere that the supply of energy is a key requirement for economic development. This is equally true for the industrially advanced countries, particularly the United States. And as electric power helped to increase productivity and consequently the incomes of the people, it also made available to consumers the benefit of a great many of the convenient services and facilities associated with economic progress. Clearly, and understandably, the demand for energy grew far faster over the longer run than did economic activity.

While the GNP (in constant prices) increased by 29 percent in the decade ending in 1975, quantity sales of electric energy in the United States rose by 82 percent, almost three times as rapidly, as shown in chart 2. The chart also shows that electric power sales from 1960 through 1973 grew much faster than U.S. economic activity, whether measured by Gross National Product (GNP), real capita income, industrial production, or nonagricultural employment. The real GNP dropped slightly from 1969 to the recession year of 1970, but national electric power sales were 6.5 percent greater in 1970 than in 1969. Electric power sales in the United States continued to grow at about the same rapid pace through 1973. The steep recession thereafter, along with unprecedented rises in oil prices and widespread conservation efforts, caused it to level off to zero growth during 1974. With the beginning of the economic recovery in the second quarter of 1975, expansion of demand for electric energy resumed, but at a slower pace than during the 1960-73 period.

Leaving the national picture and focusing on Carolina Power and Light, we see trends in chart 3 that are similar to, but more pronounced than, those in chart 2. The Company's sales of electric power (in Kwh) to ultimate consumers, including public authorities, increased by 135 percent in the decade ending in 1975. Most of the increase took place between 1965 and 1973. The demand for electric energy in 1974 was slightly greater than in 1973. The increase in demand in North Carolina for electric power over the years, as in the country as a whole, was greater than the rise in economic activity in the state, as shown by the several measures in chart 3.

The need for substantial growth in economic activity in North Carolina is essential to the well-being of the



state. This need is revealed dramatically in a recent report by the Carolina Population Center at the University of North Carolina and by the latest data from the U.S. Department of Commerce. In 1975, the state's per capita income was 16 percent below the national average. Not only was it below the national level, but more distressing is the fact that from 1972 to 1973 North Carolina slipped in per capita personal income from thirty-sixth to thirty-eighth place among the 50 states. In earlier years, it had made great progress compared to other states -- for example, moving from forty-second and forty-third places in 1960 and 1965, respectively, to thirty-sixth in 1970 and 1972, but then slipping part way back. For the people of North Carolina to enjoy a fuller share of the benefits of our society, this recent slippage condition must be halted and indeed be reversed. This reversal can come only from an improved growth rate in economic activity, which, in turn, requires a high rate of growth in electric supply. Capital-intensive industry should provide a needed boost to North Carolina economic development and overall welfare.

In addition to the need to increase economic activity in North Carolina to reverse the state's decline in rank in per capita income, there is a growing need to increase economic activity to accommodate the ongoing population shift to the State. The population of the South is growing more rapidly than that of the nation as a whole due to migration within the country. In the years 1970-75, the South accounted for over half of the total population growth in the nation. As the standard of living of Americans rises and as the number of older citizens increase rapidly in absolute and relative terms, the migration of families to the so-called "Sunbelt States" can be expected to grow steadily and substantially. The opportunities for more jobs and

higher incomes and better living standards in those states, including North Carolina, will be enhanced. Adequate power facilities will be needed to translate these opportunities into realities. In the 5 years ending in 1975, the familiar flows out of the South, most notably from the South to the West, were reversed.

- Q. Will not the need for energy conservation change some of these relationships?
- A. The pursuit of energy independence, or at least of sharply limiting the dependence on oil imports, certainly requires energy and fuel conservation, as well as shifts to coal and nuclear power and more research and development of other possible energy sources. Conservation measures are and will continue to be highly desirable and will make for somewhat slower demand growth rates for electricity in the future than in the past. But as our economy expands and living standards rise, conservation cannot significantly offset growing energy needs. Also, tendencies to substitute electricity for direct gas and oil use will offset somewhat the reduction in electricity demand attributable to conservation of electric energy. The demands made on industry for modifications in equipment and processes for environmental purposes also entail greater demands on electric power supply. An abatement in the pace of capacity expansion of electric power has been taking place. But care must be exercised to avoid serious shortages at later dates when economic recovery and growth are resumed, especially given the very long lead times involved in planning and implementing expansions in capacity.

With effective efforts directly focused on conservation and with some downward pressure on demand in response to the much higher energy prices since the 1973 OPEC

oil embargo, the rise in energy use, we hope, will not bear the same highly elastic relationship to the rise in total national output as in the past. However, it is practically certain that there will be a marked upward trend of energy demand and use will rise over the coming years in the United States, in North Carolina, and in the CP&L service area. We must not confuse the desirable slowing of growth rates in energy consumption with a no-growth situation over time. Much more electric power is certain to continue to be a prerequisite to a healthy economy.

- Q. What would you expect to be the effect of continued U.S. economic recovery on electric power in North Carolina?
- A. With further economic recovery, which I will discuss, an acceleration in the rate of increase in electricity sales for CP&L, as well as for the nation as a whole, must be expected. This will come about in large part because of rising levels of business activity and consumer purchasing power. Although the relationship between the rate of increase in GNP and the increase in electric power consumption did moderate after the energy crisis developments of late 1973, we do note that electric power sales -- nationally and in the CP&L service area -- have again been rising at more rapid rates than has economic activity. CP&L's projection of needed capacity expansion in its North and South Carolina service area is realistically predicated on a significant resumption in demand over the next several years. The rate of increase of Company sales to ultimate consumers in the year ahead is expected to be 6.5 percent.

About 85 percent of CP&L electric power sales are to consumers in North Carolina and about 15 percent to those in South Carolina. Therefore, it is reasonable and



convenient to draw on total company figures for the economic analysis of capital needs in this proceeding.

Based on Company data for summer peak loads (presented in detail by other witnesses in this proceeding), the projected annual increases in electric power demand for the next few years will vary from 7.3 percent to 8.3 percent. Given continued economic recovery, which I will discuss later, and the economic development trends that emerge in North Carolina, and the persistent tendency of electric power demand to grow at faster rates than industrial or total economic activity, the electric power demands projected by the Company seem entirely reasonable.

Increased use of electric power is, in and of itself, an important contributing element toward improving the economy of regions such as North Carolina that face strong competitive challenges from other regions. North Carolina lagged economically, as reflected in the levels of per capita personal income. However, as indicated earlier, the state has been making strong gains and, when measured by growth in per capita personal income for the 15-, 10-, and 5-year periods through 1975, has outpaced the nation as a whole and has been only slightly behind the trend for the total dozen states comprising the Southeast Region. The U.S. and North Carolina trends in real per capita personal income are shown in charts 2 and 3.

The state's main industries tend to be labor-intensive, and their ability to grow will influence the rate at which employment and per capita income will rise. The state has made exceptional efforts to attract new industry, both capital intensive and labor intensive sectors, and to encourage existing industry to expand. Recently, several important enterprises have expanded



their operations in the CP&L area, including General Electric, Hercules, DuPont, and several textile mills. The state leads the nation in personal income attributable to output of textile mill products and this area of activity, together with new and more rapidly growing industries has accounted to a very large extent for North Carolina's economic gains in comparison with those of other states. As measured in current dollars, average personal income in the state was 32 percent below the national figure in 1960, 18 percent below in 1970, and only 16 percent below in 1975, although this improvement seems to have stalled and slipped backward.

There is some distance to go, and further gains -- absolutely and in comparison to other states and to the United States as a whole -- will depend on the state's providing a good economic environment. Adequate power will certainly be an influential factor, especially in these industries where technology and rapid growth are associated with the heavy use of electric power.

The worsening shortage of natural gas in the United States will put more of a burden on electricity to meet the demands of long-run economic growth. In North Carolina, because of supply problems, utility sales of natural gas declined: Sales in 1975 were 37 percent below those of 1972, and continued curtailment of supply can be expected.

- Q. But will not increased use of electric power by plants in the area at higher cost of electricity limit their competitive standing?
- A. Increased use of electrical energy, in and of itself, should lead to a further improvement in productivity, not only in manufacturing but also in services and in other commercial establishments. The recession brought



about declines in productivity and interrupted the growth rate of electric energy consumption. Increased mechanization and increased power can result in lower unit cost of production even though power rates rise.

This improvement should benefit the state and the nation. Improvement in productivity enhances the competitive ability of some industries and geographic regions.

As can be seen in chart 4, output per hour by all persons in the private business sector was fairly level in the final three quarters of 1973 and declined throughout 1974. By the first quarter of 1975, it had fallen back to the level of 3 years earlier. Such a long lag in improved productivity is unique in this country's recent history. Despite substantial improvements in the second and third quarters of 1975, however, productivity on the average was only 1.3 percent higher in 1975 than in 1974. As the recovery gains momentum, and the rate of capacity utilization rises, productivity should improve considerably. The slower growth rate in the third quarter of 1976 saw an annual rate of increase in productivity in the private business sector of only 3.2 percent. Improved productivity is highly desirable because it should help hold down the rate of inflation from what it otherwise would be because it holds down unit costs and tends to increase competition.

#### IV. The State of the Economy and Its Prospects

- Q. What is your view of the present condition of the economy, especially as it is relevant to this proceeding?
- A. We have been moving out of the worst economic recession since the Great Depression, but the pace of recovery has been rather disappointing. With further recovery



in prospect we must give increased attention to the rising demands of our economy for electric power.

Though the rate of recovery slowed considerably in the second and third quarters of 1976, we continue to experience some economic upswing. The recovery has been irregular in its pace. Unemployment and inflation are too high and there continue to be very weak areas, such as local government expenditures, plant and equipment outlays. Housing trends have been sporadic.

In the third quarter of this year, the real GNP, which measures the nation's total output of goods and services and is the most comprehensive indicator of trends in the economy, increased at an annual rate of 3.8 percent as compared with 9.6 percent in the first quarter and 4.6 percent in the second quarter. As shown in chart 5, the real GNP has been moving up persistently, though at uneven rates, since the spring of 1975. Only in the third quarter of 1975 and the first quarter of 1976 did the rate of recovery substantially exceed the long-run growth trend in the real GNP.

The economy's potential capacity to produce continued to expand substantially, and there is now a very large gap between actual and potential production. The magnitude of this large gap can be seen in chart 6.

The Industrial Production Index, issued monthly by the Federal Reserve Board, rose 3.0 percent in the first quarter of 1976, 1.9 percent in the second quarter, and only 1.2 percent in the third quarter. In October 1976, total industrial production was still slightly below its peak reached in June 1974. Businesses have been building up their inventories, though cautiously, after a prolonged period of inventory liquidation. Idle capacity is somewhat reduced, although it remains very large and apparently is a dampening factor in

private investment commitments. Manufacturing industry was operating at 80.9 percent of capacity in the third quarter of 1976, up moderately from the recession low of 70.9 percent in the first quarter of 1975.

Financial markets have also improved, but not with a sustained pattern. Common stock prices rose dramatically but irregularly as profit prospects brightened. More recently they have sagged, suggesting a wait-and-see attitude on the part of investors. The Dow Jones index of industrial stocks broke through the 1,000 barrier several times but not by much or for long. Short-term interest rates, which had dropped precipitously from the abnormal highs of 1973 and 1974, rose somewhat in the first half of 1976, but by October had lost some of that rise. The persistence of inflation precluded parallel declines in long-term rate.

The labor market picture has improved only moderately. The total number of people employed (seasonally adjusted) has increased to a new high, but the rate of unemployment, while below the 8.9 percent recession peak reach in May 1975, has been rising since May 1976 and, at 7.9 percent in October, continues untenably high. The year brought little progress in curtailing the level of involuntary idleness.

Consumer confidence reflected in higher consumer spending was a major factor in the earlier vigorous business upturn. Retail sales showed signs of softening starting in May and lacked a sustained rise for some months. They are rising again but not spectacularly. Real disposable personal income -- income after taxes and adjusted for price changes -- exceeded the pre-recession peak in the first quarter of 1976 and continued to improve in the second and third quarters. Sizable Federal tax cuts in the first half of 1975 had boosted



disposable income of consumers and the cuts have been extended.

In an October release, the University of Michigan Survey Research Center said the short-term outlook for consumer spending had improved and that the attitude toward business conditions had also strengthened. Nevertheless, continuing inflation and high unemployment have restrained consumer spending prospects. Real spendable earnings -- workers' average weekly pay adjusted to take account of inflation and reduced by Social Security payroll taxes and Federal income taxes -- were down slightly in October 1976 from the same month a year earlier.

- Q. Do these figures mean that we are along toward full recovery?
- A. No, they do not. It is clear that the recovery from the severe 1973-75 recession is still far from complete. The trends are up, but the levels clearly show that we are still in a marked recession. Detailed measures of economic activity indicate that seriously depressed sectors persist in the economy.

There was no month from the end of World War II until this recession when unemployment was higher than the 7.9 percent in October 1976. Some 7.6 million people are available and willing to work full-time and are actively seeking but unable to find jobs. To that number should be added the idle component of those working only part-time because of unfavorable economic conditions and those unemployed seeking part-time jobs. There is another category of idleness, namely the approximately 800 thousand discouraged workers who have stopped looking for work after a prolonged and unsuccessful job search. The overall unemployment rate thus added up to over 10 percent for the third quarter of 1976.



Activity in the construction industry is still substantially below its pre-recession volume. Housing starts, for instance, peaked at an annual rate of 2.5 million units in October 1972, hit a rock bottom of 953,000 in February 1975, rose to 1.9 million in September 1976, and slipped to 1.8 million in October. It is still only about 70 percent of the pre-recession peak reached 4 years ago.

Another soft spot is the discouraging rate of plant and equipment spending associated with substantial idle manufacturing capacity. That slack, amounting to over 25 percent in September, indicates that while we are on the road to recovery, we still have a long way to go to enjoy a level of plant operation that will invigorate new investment. This can be clearly seen in chart 6, which shows the wide gap between the actual GNP and the potential GNP, which measures what our economy would produce if all its resources were reasonably fully utilized. In the third quarter of 1976, our unused potential was at an annual rate of over \$200 billion in current prices.

The prospects of inflation remain a matter of deep concern despite the fact that the rates of increase in the overall price indexes are far below the 1973 and 1974 double-digit peak rates. After taking account of special shock factors that contributed to the near runaway inflation of 1973-74, like the oil price quadrupling, the Soviet grain deals, and the devaluations, not much progress has been made toward bringing inflation under control. Arthur F. Burns, Chairman of the Board of Governors of the Federal Reserve System, in a statement to the Senate Committee on Banking, Housing and Urban Affairs, on November 11, 1976, declared that "Continued progress in unwinding inflation must remain a major objective of public policy, along with reestablishment of reasonably full employment and reasonably full

utilization of our industrial capacity." He went on to say "that these goals are inseparable -- that lasting prosperity cannot be attained in a highly inflationary environment." I certainly agree that inflation, for a number of reasons which I will discuss in greater detail later in my testimony, remains a very serious problem.

Q. What about the strength of the recovery? Will recovery continue for some time to come?

A. Developments depend to a great extent on the Government's fiscal and monetary policies. In September 1976, before adjourning, the House and Senate Budget Committees set a ceiling on legislative authorizations and expenditures of about \$413 billion, or \$20 billion greater than the President's spending proposal in last January's budget. Also, the Congress extended the tax cuts, which the President supported only in association with reduced expenditures. But, despite these more expansive fiscal moves than President Ford proposed, more stimulus appears to be required.

I expect:

- . that the GNP will continue its increase in real terms at a rate well below 6 percent well into 1977;
- . that unemployment will decline, but at an uneven and undesirably slow rate;
- . that inflation will maintain its mid-1976 rate and average no less than 6 percent well into next year;
- . that short-term interest rates will rise somewhat as the recovery proceeds;
- . that long-term interest rates will stay high and may well rise if the pace of inflation increases.

Of course, there are many uncertainties in both the public and private sector and in the international

situation about which we can only speculate at this time. Especially unclear, at this time, is the nature of recovery policies that will be formulated and pushed by the new Administration in January. President-elect Carter probably will press for stronger recovery measures, although the degree is difficult to ascertain at this time. These measures in all probability will result in increased demand for electric power and in upward pressures on the cost of capital to be raised by electric utilities and other companies.

V. The Impact of Inflation and the  
Need for Rate Relief

- Q. You said you would focus on inflation and its effect on CP&L's situation. What have been the recent trends in inflation?
- A. I want to focus on inflation because it continues to have a major adverse impact on the Company and requires serious attention in considering the Company's revenue needs.

As to recent trends, the rate of inflation is certainly down substantially from the 1973 and 1974 peaks. This development in the price picture is most welcome. But, prices have continued to rise, and the average rates of increase are a source of serious concern. Inflation for several months this year was getting worse, not better. No one, including President Ford, believes that inflation will continue at the low levels of the first half of 1976. The "Mid-Session Review of the 1977 Budget," prepared by the Executive Office of the President and sent to the Congress on July 16, 1976, showed that the Administration's mid-year expectation was that prices would rise at under 6 percent from 1976 to 1977, and that not before 1980 would we "enjoy" price increases as low as 4 percent a



year. Price stability of the variety we knew in the first half of the 1960's -- 1.25 to 1.5 percent annual increases in the Consumer Price Index (CPI) -- seems to have been abandoned as a foreseeable goal. Only a few years ago a 4 percent annual rate of inflation was considered to be more than our economy could bear. Now, we seem resigned to around 6 percent at a time when the economy has been operating far, far below capacity utilization for several years. Persistent high inflation with large idle capacity defies classical theory.

Inflation has had a serious effect on the economy as a whole. But it has been especially damaging to CP&L and most other public utilities. Non-regulated companies generally can and do adjust prices to reflect rising costs in times of inflation. But in regulated industries, prices can only be changed if and when the regulators approve. Fuel-cost adjustment provisions have been helpful, especially when very large and sudden increases occurred in oil, gas, and coal prices. But, the earnings attrition from steadily rising costs for most inputs placed utilities in an especially precarious situation over the past decade of inflation. The longer the inflation has persisted, the worse the cumulative effects have been.

The damage from over a decade of inflation has certainly not been remedied, nor has the threat of further damage been overcome. There is little evidence that the past havoc wrought by inflation and inadequate regulatory response is being corrected. The cumulated damage could well get worse if higher returns are not achieved, because price stability is not a clear, near-term prospect. In fact, the fear of higher inflation is widespread and strong and has played an important dampening role in government fiscal and monetary policy formulation.



- Q. Do you have an exhibit that shows the trends in inflation?  
A. Yes. Charts 7 through 10 show the trends of inflation since 1960.

The CPI shown in chart 7 reveals the relative stability of prices during the first half of the 1960's, the persistent inflation for a decade, the skyrocketing of prices in 1973 and 1974, and the moderating but persistently high inflationary tendencies thereafter. It required the absence of new inflationary shocks and the longest and deepest recession since the 1930's to get some slowdown in inflation. But there is no evidence that we are moving toward price stability. It should be emphasized again and again that the current inflation rate may moderate relative to the wild inflation of 1973 and 1974, but it is a rate that was considered intolerable very few years ago.

The recession of 1970-71 was utilized as a means of fighting a rate of inflation considerably lower than the rate of basic inflation that has prevailed over the past several months. Also, when controls were introduced in 1971 (Phase I in August and Phase II in November) the rate of inflation was well below the average over the most recent months.

The WPI especially reveals the extremes in price movements in recent years. Chart 10, highlights the period of exceptional fluctuation in wholesale prices. The WPI began rising rapidly in mid-1972, largely as a result of very sharp increases in agricultural prices, coinciding with the Soviet grain deal. The oil embargo in October 1973 and consequent extraordinary jump in prices of oil followed by sharp price increases of other fuels served to accelerate the rate of inflation well into 1974. By November 1974, the WPI was a staggering

23 percent higher than it had been a year earlier. Thereafter, declines in the rates of price rises were witnessed month after month. In the past several months the rate of increase has resumed a sharp climb, particularly for industrial commodities.

After several months of higher increases, the Consumer Price Index rose at an annual rate of only 4.9 percent in the August-October period. Food prices have been less volatile of late but prices of nonfood goods, as well as services, have still been rising substantially.

- Q. Before presenting your other charts and tables, would you summarize your comments on recent and prospective trends in prices?
- A. Certainly. It required an extended period of sharply declining economic activity for inflation to moderate. But it has remained precariously high even without the kinds of "shocks" that had occurred in 1973-74. A substantial and extended recovery will provide the real test as to whether serious inflation has been brought under control. There appears to be little basis for optimism that the "soft economy" approach will move us along toward price stability perceptibly and steadily. The overall price performance during the worst phases of this long and deep recession has been very disappointing. There was a long lag between the marked slowdown in economic growth in 1973 and the ensuing sharp drop in production, employment, and income in 1974 and early 1975, and the slowdown in inflation. If recovery accelerates, price performance may well deteriorate.
- Q. What makes you dubious about a retardation of inflation over the coming year or so?
- A. There are many reasons to be cautious in drawing conclusions about the end of inflation. From time to time



when there have been short periods of smaller increases in overall basic indicators of inflation, hopeful expectations have been voiced. But repeatedly optimism has proved to be ill-founded. We need to examine underlying economic factors to project future trends. In particular, we need to look at the components of price indexes to evaluate what has been occurring that accounts for recent changes in the rate of inflation.

The components of the CPI show differing trends in price movements, as seen in charts 8 and 9. The decline in the inflation rate of the aggregate CPI in the first 3 months of 1976 was largely the result of falling food prices and a temporary drop in gasoline and fuel oil prices. For the first 3 quarters of 1976 food generally was less inflationary than other goods and services.

Most services components were continuing to rise sharply. As economic recovery continues and as consumers enjoy a general rise in income and in living standards, the share of services in the total expenditures of consumers will continue to rise. Thus, price changes in the service areas will have a growing importance in determining the size and impact of overall price changes.

The major components of the WPI also show differing trends, as seen in chart 10.

It is the consensus of agricultural economists that the long-run supply price of agricultural products is moving upward, due to the higher production expenses -- fertilizer, insecticides, fuel, machinery, and so on. Also, over time, marginal lands have to be brought into productive status, at higher costs, to meet the food needs of more and more persons and to meet the demands associated with rising income levels.

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As for industrial prices, recent price increases in steel and several nonferrous metals signal future price increases in processed manufacturing and consumer goods. The high industrial wholesale price rises for several months through October (the latest data at the time of preparation of this testimony) indicate further strong inflationary measures will be widespread.

Prices in substantial areas of the economy do not seem to respond as they once did to reduced demands for goods and services. The reaction of prices to market forces becomes more and more blunted. There is a marked stickiness on the downside of pricing. In many sectors in the economy, one would have expected significant price declines during this recession. However, businesses often cut back production and employment rather than drop prices. In the automobile industry and in steel, particularly in specialty steels, manufacturers repeatedly announced sizeable price increases while production and sales were plummeting. With further recovery, administered prices will tend to be raised not only to recover higher costs but also to improve profit margins.

- Q. Do you see any significant areas of price declines?
- A. Fuel prices did decline briefly from their late 1975 peaks but that was attributable only to the lowered prices of domestic crude oil established in the Energy Policy and Conservation Act enacted late in 1975 and to the elimination of the fee on oil imports. That was temporary. The new energy legislation also provided a formula for gradual, further increases in crude oil prices at the wellhead. These increases are already taking place at retail, as well as wholesale, levels. The Federal Power Commission has already authorized



very large price increases for natural gas from new fields. Finally, OPEC appears to be signalling a further substantial increase in oil prices before the end of 1976.

- Q. Do you see anything on the wage front that would affect your concern over the possibilities of greater inflation?
- A. Wage developments could affect further the possibility of greater inflation, although for several years wage increase have tended to lag rather than lead prices. Important labor contract negotiations during the current year have been yielding increased wages for workers. To the extent that these increases are not offset by gains in productivity, they will increase unit labor costs.

Since the spring of 1976, there have been negotiations; including teamsters, rubber workers, and auto workers. These contracts assure workers of wage increase through raises in basic rates and also through cost-of-living adjustments. If these settlements are prototypes of other contract settlements, there may be some inflationary potential in the wage picture.

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As inflation has persisted, more and more new contracts have included escalator clauses. As of June 30, 1976, a total of 6.0 million workers in this country were being paid wages under major contracts (1,000 workers or more) that included wage escalation provisions. The trend in the increased coverage is seen in chart 11. Since 1970, the number and proportions of workers covered by major agreements with escalator provisions have more than doubled. Further, the escalator provisions themselves have been substantially strengthened in many new contracts.

- Q. What is the inflation rate likely to be over the next 12 months or so?
- A. Short of some kinds of anti-inflation direct governmental intervention, I believe it will average at least 6 percent and indeed may move higher through most or all of 1977. If we move aggressively to stimulate economic growth and reduce the high level of unemployment and do nothing about inflation directly, there will almost certainly continue to be disturbing price changes. In other words, without new approaches to pursue greater price stability, we are more likely to see rates of price movements on the upside than the downside.
- Q. Can the problems imposed on CP&L by inflation and recession be solved or become readily manageable?
- A. Yes, provided regulatory agencies recognize and deal realistically with these problems.



Over the past several years, inflation has imposed sharply rising operating, investment, and financial costs on utility companies. More often than not, rate increases have been too small and too long delayed to compensate adequately for the rising costs. In consequence, new applications for rate increases have come with unprecedented frequency.

- Q. What is the expected trend in CP&L construction of plant?
- A. Present plans provide a significant increase in construction. Despite a sharp cut-back over the last year or so in construction plans, the present plan for the CP&L system calls for construction expenditures to remain substantial for 1976 and the next few years.
- Q. If the Company is planning a significant further increase in plant, why did it curtail its plans recently?
- A. In 1974 and 1975, it cut back its plans for initiating construction of new facilities and stretched out the entry into service of new plant, especially in early stage of construction, when it appeared that the growth in demand for energy would slacken considerably -- both because of conservation and because of the serious economic recession. Also, the Company was finding it increasingly difficult to finance new investment on reasonable terms.
- Q. Since, as you said earlier, the economy is still not fully out of its recessionary period and since interest

rates are still high by historical standards, why does not the Company continue to cut back its construction plans and continue to stretch out its schedule of bringing new plant on line?

- A. The Company believes the prospective growth in demand for electric power will make further cutbacks and deferrals precarious. I share its assessment that heavy demands over the years will confront it and that development of the North Carolina economy requires that there be no shortfall in power.

There has been an important change in population growth in North Carolina. Not only has the State's population been growing at an increasing rate since the mid-1960's, but, as I noted earlier, the once familiar net outward migration has been revised and is now large -- estimated by the National Planning Association at 142,800 for the period 1970-75. A good part of the reason for the net inward migration is the growing importance of job-creating activities in the State. Furthermore, there has been an important emergence of industries that must be assured of an adequate and reliable supply of electric power. Companies interested in setting up new production facilities attach utmost importance to the present and future availability of this essential input.

Moreover, given the prospect that I described earlier of a substantial rise in price levels over the coming years, any undue present curtailment of construction followed by a later necessary rush to acquire necessary plant and equipment would mean likely and sizeably higher electric power costs to its customers. Because of the nature of the industries producing electric power generating, transmission, and distribution equipment --

marked by the need for long lead times and heavy backlogs when orders run high -- deep cutbacks and deferrals of orders by electric utilities can prove very costly to those utilities and ultimately to their customers.-

Q. In view of these price trends, are the problems created for the Company by inflation and recession manageable?

A. I believe so. The solution lies in realistic charges for the services the Company provides to its wholesale and retail customers. Further, the cumulative harm done to CP&L and to utilities in general by economic events of the past several years, particularly the harm caused by inflation and inadequate returns on capital, will take several years to remedy even if prompt, full, and positive consideration is given by the regulatory authorities to higher rate-of-return requests. Limited or uneven responses by regulators will not achieve what needs to be done and will only put off the day of reckoning.

As I have noted, recovery itself imposes new investment and operating cost demands on the Company. Long lead-times add to the difficulties of planning and building adequate capacity to meet growth in demands and to avoid excessive costs. Above all, the Company will need a sufficient rate of return to be assured access to capital markets for the funds needed to fulfill its responsibilities.

Q. Would you comment on increased costs of financing?

- A. Inflation has also had severe impacts on financing costs. The cost of long-term debt capital for U.S. businesses has risen almost parallel to consumer prices. Chart 12 compares the index of yields on corporate bonds with the index of consumer prices. In September 1976, corporate bond yields were 84 percent above 1960, whereas the CPI had advanced 95 percent over the same period.

The sharp rise in the cost of long-term debt financing since 1966, as shown in chart 12, was attributable principally to inflation. With inflation, lenders of long-term funds are increasingly concerned that the dollars received upon repayment of loans have less value than the dollars originally made available to the borrower. For this loss in purchasing power, lenders seek an "inflation premium" as part of the interest they earn. As high as long-term rates have been in many recent years, they have not fully reflected the inflation premium. Consequently, it is not surprising that the decline in interest rates on corporate bonds since late 1974 has been considerably less marked than the decrease in the rate of inflation.

The rise in the cost of long-term debt to the Company can be seen in chart 13. Cost of new debt has risen markedly since 1951, when a 30-year mortgage bond was issued at a cost of just over its 2 7/8 percent coupon rate. That bond is still outstanding. Rates paid by the Company on new debt since 1951 have risen progressively, especially over the last decade of high inflation. They have varied, largely with inflation, and reached their peak with the latest new, 9-year mortgage bond issue April 1975. That issue cost the Company 11.27 percent.

- Q. How will the recent slowing of interest rate rises affect CP&L's financing costs?
- A. Recently, there has been a moderate easing of interest rates. But, it must be recognized that new borrowing, even at present lower rates, will continue to result in rises in embedded debt costs. They will continue to rise over the foreseeable future not only because of additional borrowing but also as bonds issued some years ago at low interest rates mature and are refinanced by new bonds at much higher interest rates. For example, early in 1979, \$20 million of bonds issued at 3 1/8 percent in 1949 will mature. Debt cost will continue to rise as new debt is added until either the average cost of all embedded debt rises to the current level of the cost of new debt, or the new debt rate falls to the embedded level. The latter is not a near-term prospect.
- Q. What are the prospects for long-term interest costs?
- A. They depend in large part on the success or failure of efforts to keep inflation under control. Lenders will reduce the inflation premium they demand in the long-term capital market only when they are confident that the slowdown in inflation will persist. Since I do not believe the inflation outlook is bright, I conclude that long-term rates are not likely to drop. In fact, they may well rise in 1977.

The large peacetime Federal deficits, officially estimated on July 16, 1976 to total almost \$140 billion dollars in the two fiscal years and transition quarter between July 1, 1975 and September 30, 1977, tend to buoy long-term rates. Moreover, flotations of corporate debt and equity financing have grown substantially since the cyclical low in 1973, as can be seen from chart 14. Although new corporate security issues in the first 3 quarters of 1976 were somewhat less than



highs in the same quarters of 1975, further economic recovery will bring growth in financing needs and prospective greater resort by corporations to capital markets. Increased offerings strengthened long-term interest rates early this year, with some subsidence over the summer and fall of offerings and rates.

- Q. You have spoken about the effects on the Company of past inflation and your concern about further effects of continued inflation. Can you point out specific evidence of the harm of the inflation of the past decade?
- A. Chart 15 clearly shows the damage to the Company as reflected in earnings and stock prices. The solid line traces the accelerated rate of inflation starting after 1965. The dotted line shows that CP&L's common stock price began a sharp decline as the earnings outlook dimmed because of inflation. The 1975 average market price of the Company's stock, even after some recovery from its depressed 1974 level, was little more than one third its peak of 1965 and almost one fifth below its 1960 level. More significantly for the investor, by 1975 the inflation, as measured by the Bureau of Labor Statistics' Consumer Price Index, had risen by 70 percent since 1965, cutting far more deeply into the purchasing power of a share bought back in the 1960's than is reflected in the nominal price per share.

Also, as chart 15 shows, the rate of return on CP&L year-end common equity capital rose from 1961 through 1965 and fell considerably thereafter as Company costs outpaced revenues. By the end of 1975, the rate of return on common equity was 19 percent below 1965 and just about back where it was in 1961.



The Company's stock had been selling between 2 and 3 1/2 times its book value for the first half of the decade of the 1960's. However, as shown in chart 16, by the end of 1975, CP&L common stock was selling at about 10 percent below book value. An issue of 3 million shares had to be sold in October 1976 at a price below book value. To sell common stock at less than its book value dilutes the investment of each existing common stock investor who, at the time of that sale, already holds common stock in the Company. The sale undermines his investment and causes fears in future, as well as present, shareholders that the same unfortunate event will occur again. That concern, in turn, further depresses the market price and makes investors apprehensive about acquiring more shares or even holding the Company's stock. Sales below book are unfair to investors in the Company and tend to impose on the Company heavy costs in trying to raise new funds.

The performance of CP&L's common stock, reflecting its low rate of return on equity, has been similar to that of most utilities. They suffered severely as a consequence of rising costs during periods of rapid inflation. For CP&L, as for public utilities in general, stock prices, since 1960, have risen and then fallen as rates of return have risen and fallen absolutely and relative to other investment opportunities. However, CP&L's trends have been more marked than the average, as measured by Moody's 24 public utilities. The trends can be seen in chart 17. The trends in stock prices are calculated from the nominal dollar prices. While the data bring out the comparison of CP&L with other public utilities, which generally have shared CP&L's difficulties with the economy, they understate the adverse picture seen by the investor -- or potential investor -- in utility shares.

0. Would you explain what you describe as an understatement of the investor's impression as it applies to CP&L common stock?

- A. Yes. The unattractiveness of the Company's stock can be understood by examining the trend in its price in terms of purchasing power. It may have been noted that chart 15 showed the Company's return on equity along with the CPI and the CP&L common stock price index. The CPI measures changes in the purchasing power of the dollar, and is useful in revealing the deterioration of the real value of the shares of common stock of CP&L and of the Company's return. The market price of CP&L shares declined severely -- by 64 percent -- in current dollars from 1965 to 1975, but it declined even more drastically -- by 79 percent -- in constant dollars, namely in purchasing power. The damage of inflation, with lagging rates of return and consequent disenchantment by investors, deeply eroded the value of CP&L shares.

Also of concern to the investor is the declining attractiveness of stocks in relation to bonds. Earlier there was substantial difference between the rate of earnings on common equity and interest rates on new long-term debt.

Chart 18 compares the cost of new debt and the return on equity for CP&L. The return on equity for 1975 was below what it had been 15 years earlier, whereas the cost of new debt in 1975 was more than double the rate it had been in 1960. The 7.58 percentage point difference between rate of return on equity and the cost of new long-term debt in 1964, completely disappeared in several subsequent years. In three subsequent years, including 1975 and two other recent years, the cost of new debt was actually greater than the rate of return on common equity.

Different segments of the capital market supply debt

and equity financing, but they are closely related and influenced by many similar factors. Historically, the cost of equity capital has been far higher than debt cost, but they tended to move in a reasonably parallel relationship. Severe inflation has distorted that relationship. The potential investor takes into account the fact that yields on the Company's debt have risen sharply, while return on equity has fallen substantially, over the past 10 years. This explains at least in part the reason why the market for the Company's common stock has been severely depressed relative to earlier non-inflation years.

- Q. Is CP&L's experience different from that of other electric utilities with respect to the relationship between return on equity and cost of debt?
- A. The experience of CP&L is by no means unique among utilities. It has been the experience of the utility industry on the whole. After the middle of the 1960's, the spread between the returns on debt and equity shrank rapidly for both the Company and the electric utilities as a whole. The shrinkage continued with the rapid inflation and has been exacerbated by the impact of the energy crisis.

Chart 19 compares the average yield on Moody's grade A utility bonds with returns on common equity both for Moody's series of 24 public utilities and for CP&L and illustrates the narrowing of the differential just described. Even with some economic recovery, and with the decline from double-digit inflation, the differential continues to be almost nil for CP&L and other utilities. The differential experienced in the past few years cannot be considered acceptable by prospective investors in CP&L and, generally, other



public utility shares and therefore serves to depress the price of equity shares. Also, the rising risks have depressed market prices of public utility and CP&L common stocks. Rational investors buy equities rather than bonds only when they can expect extra compensation for the extra risk. In the past decade, inflation, the energy crisis, and the difficulties of regulation have added greatly to the risks of public utility equity securities, but the return on equity has declined rather than increased to compensate for this greater risk.

As readily seen in chart 19, the pre-inflation historical spread between bond yields and return on equity has been 6 or more percentage points. An investor may not require a return on equity that is two or more times the current yield on debt instruments, as prevailed for investors in CP&L before the impact of serious inflation, but there is no reason why he should accept a risk premium far less than the historic absolute differential of 6 or more percentage points. That differential is not a precise prerequisite for equity financing, but it is reasonable to expect equity investors to demand a risk premium not much less than what was historically available before the inflation took hold and before utilities shares became more risky.

- Q. Are you saying that investments in utility common stocks are less attractive, not only than investments in bonds, but less attractive than in the past and than equity investments in other industries?
- A. Yes. Relative to other industries, the risks in utilities are now greater than they used to be, whereas there are more alternative investment opportunities of high quality than there were in the past. Industrial and



commercial companies have to a considerable extent been able to insulate themselves in varying degrees from cyclical fluctuations by diversification, have been able to achieve steady growth in earnings, and have been able to expand largely from reinvested earnings. On the other hand, public utilities have had to resort regularly and in much larger amounts to external capital sources than have other corporations, and they have experienced downgradings of their securities.

- Q. Despite the unattractiveness that you have described, haven't CP&L bonds retained a respectable quality rating?
- A. Regrettably, the Company's bonds have been downrated. The current rating from Moody's is Baa; from Standard and Poor's, it is A. The present rating is attributable to financial analysts' appraisal of the overall attractiveness of CP&L debt securities. It is important to the Company and to its customers that CP&L bond ratings be given higher quality designations, thus restoring its bonds to earlier evaluations.
- Q. What effect does an improvement in bond rating mean for the Company?
- A. The raising of a bond rating can represent a large reduction in cost to a company that expects to continue borrowing, whether for added funds, or for refinancing maturing debt, or for both. Bond ratings are critical to a prospective investor's assessment of risk in buying bonds and to the interest rate he therefore will demand for his purchase. For example, in 1975, public utilities sold almost \$8 billion of bonds. The yields varied according to ratings for public utilities as follows: Aa-9.44 percent, A-10.09 percent, and Baa (CP&L's rating by Moody's), 10.96 percent.. Thus, for utility selling \$122 million of bonds in 1975 (the



amount sold by CP&L), the annual interest cost would be 0.65 percent lower if its rating had been Aa rather than A. In dollars, that would mean an annual financing saving of \$793,000. If the rating had been A rather than Baa, the spread would have been 0.87 percent lower for an additional annual financing saving of \$1,061,000. Considering that bonds are outstanding for a great many years -- the CP&L mortgage issues having maturities ranging from 9 years to, in most cases, 30 years -- the large added interest burden that is assumed as ratings decline is apparent. It is the electric power consumer who ultimately bears this increased burden.

- Q. As the demands for electricity rise, will not the increase in utility revenues translate directly into higher earnings for CP&L and for other utilities; and will the financing burden become less?
- A. The answer is: not likely as long as inflation persists. To the extent that the economic upswing requires new Company investment in higher cost plant and equipment, financed at higher capital costs than existing plant, and with wages and other operating costs rising earnings growth can in fact be impaired. With persistent high rates of inflation, increased demand will probably be associated with declining and inadequate rates of return, especially if regulators are not responsive to the need for higher service charges to cover higher costs.
- Q. Given that situation, what is the prospect for the cost of equity financing?
- A. The prospect is not favorable. We must recognize that the attractiveness of the common equity of CP&L and other utilities has been substantially impaired by the impact of inflation, supply shortages, and other uncertainties over many years. Much better earnings performance now



and for several years to come will be required to restore investor confidence in such securities. The allowed and realized rates of return have to be high and persistent enough to restore and maintain confidence in CP&L's financial integrity, permitting it to attract sufficient total capital to continue to meet the needs of its customers.

Q. Can you compare CP&L common shares with alternative equity securities available to investors?

A. As can be seen in chart 20, the prices of industrial stocks, as measured by the Standard and Poor's index, held up relatively well until 1973, long after CP&L's shares fell sharply. Industrials dropped in 1973 and 1974 with the slowdown in growth in 1973 followed by the worst recession since World War II. With recovery, prices of industrials rose and by August 1976, they had exceeded their average December 1974 value by 55 percent, their average 1968 value by about 8 percent, and were almost double their 1960 average. In contrast, at the end of August 1976, CP&L stock was 5 percent below its average 1968 price, and even 4 percent below its average 1960 price.

As seen in chart 21, which adjusts for the effects of inflation, owners of industrial stocks had on balance maintained purchasing power in mid-1976 as compared with 1960. Utility investors generally had lost almost half of their purchasing power. A share of CP&L at the end of August 1976 had only one-fourth the real value it had in its peak year of 1965.

Q. Shouldn't the prospective improvement in the economy limit the need for the Company to go to the capital market for equity and debt funds?



- A. The economy is still in the early stages of economic recovery, and large quantities of capital will be needed to sustain and expand that recovery. If the costs of utilities increase more rapidly than their revenues, the further erosion of earnings can undermine the role utilities will have to play in our economic expansion. In fact, as profits rise in other sectors the relative attractiveness of shares of utilities will decline unless earnings increase substantially. One of the factors which causes inadequate rates of return is the higher cost of investment for given unit of capacity. Chart 22 shows for U.S. investor-owned electric utilities the large increase since 1968 -- almost a doubling -- in new investment costs per installed kilowatt of new generating capacity.
- Q. How much demand will CP&L make on capital markets in the near future?
- A. I have not made independent estimates of CP&L's investment needs, but the need for the Company to keep pace with growing electric power demands in its region make certain its continued need to secure substantial new funds.
- Q. For such financing as it will undertake in the capital markets, will it meet any above-ordinary competition for funds?
- A. Given the outlook for continuation of the present economic recovery plus the nation's longer-term commitment to relatively high-level employment, the demands on the capital markets will be great, as firms in many industries, especially in the energy field, seek substantial amounts of new money in the years ahead. The forthcoming capital requirements of energy-producing companies will be unprecedented even with the cutbacks that have been announced over the past 2 or 3 years. Housing, basic



materials producers, manufacturing, and commerce will have large demands for new capital as the economy expands. In early November 1976, the McGraw-Hill Publication Company, releasing its annual survey of preliminary plans for business capital spending, said that businesses plan to increase their outlays for new plant and equipment by 6 percent in real terms for 1977. Moreover, it said, the upswing will be across the board, with every industry it surveyed indicating plans for increases in investment. Part of the reason for the rise is that businesses had spent far less on new producing facilities in 1976 than originally planned.

#### VI. The Necessary Remedies

- Q. What conclusions do you draw from the developments you have described?
- A. Returns on equity for CP&L, as well as for regulated utilities in general, must rise to much higher levels if financing adequate to meet new demands is to be assured. New earning rates must be sufficiently above long-term interest rates to compensate for the added risks of equity ownership and high enough to be competitive in the equity financing market. This should be achieved promptly, convincingly, and continuously, because deteriorated financial structures will not be easily and quickly overcome. The investment community must be persuaded that regulation is consistently responsive to the need for fair and reasonable higher rates of return. Higher returns on equity will be needed to improve prospects for marketing equity securities.

This proceeding poses problems about policies and issues that determine the adequacy of earnings rates. Inadequate earnings make it difficult and costly to sell new common stock except on terms that



are unfair to existing shareholders by diluting the value of their shares. Such terms cause deterioration in financial structures, an erosion in quality of debt instruments, and the downgrading of bonds. The consequences will be an increase in the long-run costs of both debt and equity financing, which eventually the consumer will have to pay.

Q: Has the Company been unable to obtain financing?

A. CP&L has not been absolutely precluded from financing needed expansions and improvements in recent years, but it has been confronting major and increasingly difficult problems. The ratings of its bonds have been lowered by Moody's and by Standard and Poor's. The proceeds from its issues of common stock in October 1976 averaged \$21.65 per share, substantially below the pre-issue book value of \$23.04. In this situation, investors who already owned CP&L common stock before that new issue suffered dilution -- that is, suffered a loss of their investment as the result of the larger increase in total number of shares than in the assets of the Company, thereby reducing the book value per share. This situation, if allowed to continue, will surely become increasingly untenable. Stock issues will become increasingly disadvantageous and bond ratings be adversely affected. The entire financial structure of the Company can be significantly weakened.

Q. Is the need for more capital the only reason you urge the Company be allowed to earn a higher rate of return?

A. The need for additional capital, and therefore access to capital markets, is not the only reason for justifying a higher rate of return. Even if substantial additional amounts of external capital were not needed, a higher rate of return should be granted to preserve the financial integrity of CP&L and provide its investors an opportunity to receive a fair and reasonable return on their investment.

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- Q. Is there any special element of risk to the financial integrity of utilities, which are already subject to regulation?
- A. Compared with alternative investments, shares of CP&L, and utilities generally, no longer enjoy their former standing. Financing plans and regulatory review must recognize this development. The investment status of CP&L -- and other public utilities -- has been impaired by the adverse effects of inflation. Investors recognize that the nature of the regulatory process itself adds an important element of risk in times of inflation. The simple fact is that regulation precludes regulated industries from making prompt rate adjustments in response to changing economic conditions and rising costs. These impacts can be mitigated in some measure through cost escalation clauses, updating of test periods, and allowances for attrition. But, the added risk cannot be totally eliminated. Inherent in electric utility investment is the volatility of earnings related to unpredictable fluctuations in weather. Also, uncertainties associated with the energy crisis and environmental standards have added further to these risks.
- Q. Has not the North Carolina Utilities Commission over the recent years authorized increases in the rate of return for CP&L?
- A. Yes, but there continues to be a need for further review. Generally speaking, increased costs and attrition have prevented the earning of the allowed rate of return over any substantial period of time. An allowed rate of return is certainly not to be a guaranteed rate of return. But the usual experience of shortfalls in actual returns from authorized levels indicates the pressing need for frequent reexamination of applicable tariff rates and incessantly increasing costs.

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- Q. In describing the problems caused by the economy, do you question whether the regulatory process has made a unique and essential contribution to our economic strength.
- A. Where an economic area benefits from an exclusive franchise that precludes wasteful duplication of facilities, regulation is needed to protect the consumer while still providing the advantages of private investment and private management. However, the regulatory process, which long served to achieve fair and equitable results, appears not to have been designed to cope with high rates of inflation. To continue to achieve fair and equitable results, the regulatory process must provide flexible means for adjusting speedily to changing circumstances. Adversary proceedings give regulators the opportunities to get the benefit of divergent views and facts on which to base judgments and decisions.

The need for informed judgment is the very reason for the existence of hearings conducted by regulatory bodies. Judgment goes to the very heart of the regulatory process. Regulators need to look to the future and make decisions that are appropriate for future conditions to which the decisions will apply. Decisions should not become obsolete soon after adoption. Such obsolescence occurs when the returns permitted under regulatory decisions are inadequate to cover the company's cost of capital costs and thereby preclude the company from obtaining necessary financing at reasonable terms and from maintaining a sound capital structure. They are also obsolete when costs have risen and the allowed rates of return cannot be earned. They are obsolete when risks have risen relative to other industries and returns have not risen commensurately.



Q. Regarding earnings attrition or erosion, what should be a regulatory body's objective?

A. The overriding objective of regulatory bodies must be adequate service for the general public, which in turn requires that there be adequate capacity and that operating efficiency be continuously maintained or upgraded. For all these goals to be possible, the regulated company must have a realistic opportunity to earn an updated and adequate authorized rate of return. This is essential if the company is to assure the consumer that he will get the services he needs at prices that are fair. To enable the company to obtain the capital required to meet this objective, the allowed return must be large enough and current enough to assure investors of the financial integrity of the firm and make it attractive enough to compete on a fair footing with companies of similar degrees of risk in other industries.

Q. Do you believe CP&L needs a higher rate of return?

A. I definitely do. There is a clear need for a higher rate of return. The basis for this conclusion can be summarized briefly. Labor, material, and capital costs are still rising faster than can be offset through greater productive efficiency. Rising costs per unit of output continue to cut deeply into the returns on investment. Interest on embedded debt keeps increasing, as does the required cost of equity capital. The accumulated gaps between rising costs and actual returns must be overcome.

Meeting the legal and economic requirements for reasonable and fair rates of return on investment has become increasingly difficult. Equity financing has



become more expensive, yet it has become ever more essential to assure sound financial structures. The Company needs capital to achieve higher efficiency, to serve the power demands of its community adequately, and to help expand job-creating economic activities in that community.

Investors do not provide capital simply because it is needed or is in the public interest. Capital markets are competitive. CP&L cannot raise debt or equity funds at rates below the market just because it is a large supplier of a critical service in an important area. It cannot, nor can this Commission for that matter, stem the tide of inflated costs. However, failure to earn revenues to cover all costs, including capital costs, will in the longer run aggravate inflation. An inadequate rate of return for CP&L will lead to even higher capital costs -- and therefore higher user rates. The alternative would be to curtail capital expenditures, which would adversely affect quality of service in CP&L's North Carolina service area. The sound economic course is to allow a rate of return for CP&L that is realistic in terms of the situation the Company faces in the period immediately ahead. In terms of common equity, a return in the range of 14 to 15 percent in the period during which the proposed rates are in effect would be realistic in this case.



DIRECT TESTIMONY OF JULIUS BREITLING

1. Q. Will you state your name and business address?

2. A. My name is Julius Breitling and my office is at 100 Church Street,  
3. New York City.

4. Q. What is your occupation, Mr. Breitling?

5. A. I'm Director of the Valuation and Appraisal Department of Ebasco  
6. Services Incorporated.

7. Q. What is the nature of your duties?

8. A. I am responsible for valuations and appraisals of industrial and  
9. utility properties for ad valorem tax, condemnation, damage and  
10. insurance claims, obtaining mortgage loans, sales, purchases or  
11. leases, cost of service and rate cases; mortality and depreciation  
12. studies to determine service lives and depreciation rates for  
13. utility property.

14. Q. Will you please summarize your education and experience?

15. A. I was awarded my Bachelors Degree in Mechanical Engineering in 1959  
16. from the City College of New York and in 1969 I was awarded my  
17. Masters Degree in Business Administration from Iona College, in  
18. New Rochelle, New York. My master's thesis entitled "Determination  
19. Of Generator Capacity Reserve Requirement" covered the subject of  
20. the determination of generating reserve requirements by probability  
21. methods. From 1959 until 1967 I was employed by the New York State  
22. Public Service Commission and served in several bureaus at various  
23. levels. I was promoted to the title of Senior Valuation Engineer in  
24. 1963. My responsibilities during my employment with the Commission  
25. encompassed many phases of utility regulation including the areas of

1. safety, service, financing, rates, valuation and depreciation.
2. Q. What was the nature of your duties?
3. A. My duties included, utility property valuation studies to determine
4. original cost, depreciation, use, usefulness and adequacy of plant.
5. I made engineering economic studies, weather normalization studies,
6. cost of service studies, mortality studies, and other technical
7. analyses relating to utility property and operating costs and
8. expenses and their classification in accordance with the Uniform
9. System of Accounts. I made field examinations of construction work
10. in progress and analysis of contracts to determine if expenditures
11. were reasonable and proper and in accordance with the contracts. .
12. I investigated various phases of utility operations such as rate
13. matters, utility financing, mergers, consolidations and property
14. transfers. I examined exhibits submitted by utilities and prepared
15. exhibits that were submitted by the Commission Staff at formal
16. hearings relating to the above matters for electric, gas and water
17. companies.
18. My assignments included that of Resident Engineer, representing
19. the Commission, at several of the largest electric and gas
20. companies in New York. As Resident Engineer, I was responsible for
21. all facets of utility regulatory responsibilities as I just outlined.
22. Q. Please continue.
23. A. From 1967 through the present, I have been employed by Ebasco Services

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1. Incorporated with the exception of two brief periods, from January  
2. 1969 through April 1970, and from June 1972 through May 1973, when I was  
3. employed by United Engineers and Constructors (UE&C) as a Senior  
4. Engineer, and Commonwealth Management Consultants (CMC), as an  
5. Executive Consultant.

6. My responsibilities with UE&C included financial feasibility  
7. studies, engineering economic studies and depreciation studies.

8. As Executive Consultant with CMC, I was assigned to the Regulatory  
9. Services Division and had the responsibility for the supervision and  
10. preparation of all valuation and depreciation studies.

11. My employment by Ebasco has been in the Valuation and Appraisal  
12. Department where I have held the titles of Senior Consultant,  
13. Principal Consultant, and now hold the title of Director.

14. During my employment experience to date, I have made depreciation  
15. studies for many millions of dollars of utility property and have  
16. made valuations of hundreds of millions of dollars of electric,  
17. gas and other utility and industrial property.

18. Q. What is your professional status?

19. A. I am a Professional Engineer, licensed in New York, Massachusetts,  
20. Texas and Virginia.

21. I am also a Member of the American Society of Mechanical Engineers,  
22. a Senior Member of the American Society of Appraisers, a Member  
23. of the American Gas Association, and a Member of the National  
24. Society of Professional Engineers.



1. Q. Have you testified before any regulatory bodies?
2. A. Yes, I have.
3. Q. Where have you testified and what was the subject of your testimony?
4. A. I have testified before courts, commissions, and city councils in
5. Indiana, Maine, Texas, and New York, with regard to the value of
6. utility property and depreciation for rate making, condemnations
7. and sales/purchases.
8. Q. Was Ebasco engaged to make a replacement cost study of Carolina Power
9. & Light Company's electric plant in service?
10. A. Ebasco was given an assignment to determine the replacement cost new
11. and depreciated of Carolina Power & Light Company's (CP&L) electric
12. plant in service at June 30, 1976.
13. Q. Was this assignment carried out under your supervision and direction?
14. A. It was.
15. Q. What was the scope of this assignment?
16. A. The scope of this assignment consisted of the following:
17. 1. Determine the replacement cost new of CP&L's electric plant in
18. service at June 30, 1976.
19. 2. Determine the replacement cost new less depreciation of this
20. property at June 30, 1976.
21. Q. Did you make use of certain basic accounting data provided by the
22. Company?
23. A. Yes. I used plant and property retirement data that were supplied
24. by the Company.



1. Q. Mr. Breitling, what have you done to prepare yourself to express
2. an opinion with respect to the replacement cost new and depreciated
3. of the Company's property?
4. A. During the past several years, Ebasco has been given similar assignments
5. and Mr. J.J. Reilly, the former Director of the Valuation and Appraisal
6. Department, has testified to his opinion of the value of CP&L's
7. electric plant in service. I assisted Mr. Reilly in making many
8. of the studies that supported his position including the studies
9. referred to in CP&L's last two rate cases with regard to the "Substitute
10. Plant Method of Valuation".
11. In addition, I was responsible for the analyses and preparation of the
12. Depreciation Study made by Ebasco and to which Mr. Reilly testified in
13. the last rate case. I worked closely with Mr. Reilly and concur with
14. the recommendations he made. Those recommendations were subsequently
15. approved by this Commission.
16. I have inspected the Company's property including all production plants,
17. many of the major transmission substations and transmission lines and
18. several distribution substations. As a result of this inspection, a
19. review of Mr. Reilly's prior inspection notes and subsequent
20. discussions with him, I have obtained a knowledge of the diversity of the
21. territory and loads served by the Company. I have reviewed the Company's
22. property accounting system and the operating and maintenance practices
23. to acquaint myself with these elements and to consider their effects.



1. Q. Please describe briefly the procedure that you followed in determining  
2. the replacement cost of the Company's Electric Plant in Service.

3. A. The basis for determining the replacement cost of CP&L Electric Plant  
4. in Service at June 30, 1976 was to determine its reproduction cost  
5. new at that date.

6. There are basically two approaches to determine the reproduction cost  
7. of a Company's property. One way is to make a detailed inventory of  
8. all the facilities and price this inventory at the cost in effect as  
9. of the valuation date. This is a lengthy, time-consuming and expensive  
10. approach. The second method is to apply appropriate cost indexes to  
11. the original cost to bring that cost to current price levels. I have  
12. used this second method.

13. Q. What information did you use in your approach?

14. A. The basic elements required to determine the Trended Original Cost at  
15. June 30, 1976 for each account, were the original cost balances  
16. at June 30, 1976 dated to years of original installation and  
17. appropriate trend factors to bring the original cost to the  
18. June 30, 1976 price level.

19. Q. What construction cost index did you use in your trending study?

20. A. I used the Handy-Whitman Index of Public Utility Construction Costs.

21. Q. What is the Handy-Whitman Index of Public Utility Construction Costs?

22. A. The Handy Index as it is commonly known in the public utility industry,  
23. was first developed by William W. Handy, a Consulting Engineer of  
24. Baltimore, Maryland. In 1921, Handy was successful in presenting



1. before the Maryland Public Service Commission the trended values of
2. a large utility property. The trends he used were based on the actual
3. price level fluctuations of the various classes of basic material, labor
4. and equipment making up the utility plant. Prior to this time and in
5. several later instances, utility properties were valued by the use of
6. general commodity indexes but these were deemed unacceptable to the
7. courts, mainly, because they were too general in nature.
8. Following their acceptance in the 1921 case, Handy prepared his
9. indexes on a nationwide basis and published them in 1924, when
10. they were called the "Handy Index of Public Utility Construction
11. Costs". Upon the death of Handy in 1931, the continuation of the
12. publication was undertaken by Whitman, Requardt and Smith, a firm
13. of Consulting Engineers. They developed and published Bulletins
14. No. 16 through No. 39. Bulletins No. 40 through No. 50 were
15. developed jointly by Whitman, Requardt and Associates and Benjamin
16. L. Smith and Associates. On January 1, 1950, the rights of
17. publication were purchased from the estate of William W. Handy by
18. Whitman, Requardt and Associates and the name was changed to
19. "Handy-Whitman Index of Public Utility Construction Costs", as
20. it is known in its present form.
21. It has been widely used in appraisal of electric utility properties
22. and has been found acceptable for such work by many courts of law,
23. state regulatory agencies and by the Internal Revenue Service.
24. Q. Mr. Breitling, do you have a knowledge of the composition of the



1. various indexes representing the property covered by the Handy Index?
2. A. Yes. My knowledge of the Handy Index goes back for a period of
3. approximately 9 years when I first came to Ebasco. During my
4. employment with Ebasco I worked on several assignments requiring
5. the application of the Handy Index. Ebasco's files contain a great
6. deal of information as to the composition of the Handy Index from
7. its early days when Ebasco engineers assisted with studies relating to
8. the determination of the original cost and trended original cost
9. of Carolina Power & Light Company's property. While working with
10. Mr. Smith on this assignment, Ebasco's engineers obtained detailed
11. information on the composition of the Handy Indexes.
12. Q. Is that the extent of your knowledge of the Handy Index?
13. A. No. In 1974, in order to determine the suitability of using the
14. Handy Index for several of Ebasco's clients I spent a day at the
15. offices of Whitman, Requardt and Associates reviewing their construc-
16. tion of the indexes, discussing their methods and procedures for
17. obtaining the data such as material and labor costs and the frequency
18. of their analysis to determine the proper weight to give the component
19. elements of utility construction costs so as to reflect the
20. most modern construction methods.
21. In addition, they supplied me with the exact composition, at that
22. time, of the various elements in each of the indexes we used.
23. Q. Mr. Breitling, did you satisfy yourself that their approach to
24. constructing and updating the indexes was appropriate and that the

1. indexes were relevant to current day costs?

2. A. Yes, I did.

3. Q. Have checks been made to compare costs trended by the Handy Index  
4. with costs developed by trending through index numbers constructed  
5. by reflecting a particular company's experience or with costs  
6. developed by inventory and repricing methods?

7. A. Yes. Whitman, Requardt and Associates, publishers of the Index,  
8. have made such checks and in their experience have found that  
9. trended costs developed by the Handy Index as compared with cost  
10. estimates made for public utilities based on their own index numbers,  
11. or cost estimates based on inventory and repricing, check within 5  
12. percent or less for the overall value of the properties. In my own  
13. experience during the past nine years in the use of the Handy Whitman  
14. Index, I have made similar checks for a number of electric utility  
15. companies and I have had the same results.

16. Q. Based upon your knowledge of the composition of the Company's  
17. physical plant and also your knowledge of the composition of the  
18. Handy Index, do you have any opinion as to the applicability of the  
19. Handy Index to Carolina Power & Light Company's electric property  
20. within your assignment?

21. A. Yes. On the basis of my knowledge of the Company's electric property,  
22. the original cost of such property, and the composition of the Handy  
23. Index, it is my opinion, that my application of the Handy Index to  
24. the various classes of the Company's electric plant in service



1. results in a reasonable translation of the Company's original cost  
2. of such property to what such property would cost as of June 30, 1976.
3. Q. What pages in the Handy Index did you use in connection with your  
4. trending study?
5. A. I used Table 6 which is contained on Pages 22 to 26 inclusive of  
6. Bulletin No. 104. This table shows the construction costs trends of  
7. electric light and power construction for the South Atlantic  
8. Division, one of six geographical divisions for which construction  
9. cost indexes are published.
10. Q. In your trending procedures, did you confine yourself entirely to  
11. the use of the Handy Index?
12. A. The Handy Index was applied to more than 99.5 percent of the  
13. electric property which was trended in our study. For the other  
14. 0.5 percent of the property trended, representing miscellaneous  
15. property accounts for which the Handy Index did not provide  
16. indexes, I used appropriate trends compiled and published  
17. by Marshall and Swift, and Engineering News Record.
18. Q. Have you relied upon the figures in these sources in arriving  
19. at your calculations?
20. A. I used the figures therein to develop cost multipliers  
21. which were used to translate construction costs incurred at  
22. an earlier price level up to the June 30, 1976 price level.
23. Q. I hand you this folio of eight pages and ask if you can identify it.
24. A. Yes. This is a photocopy of Pages 22 through 26 of the book to which  
25. I referred entitled "The Handy-Whitman Index of Public Utility



1. Construction Costs, Bulletin No. 104 to July 1, 1976."

2. (Identify as Breitling Exhibit No. 1)

3. Q. Now, Mr. Breitling, as a result of the application of the above-  
4. mentioned trend factors, have you estimated the original cost  
5. trended to the July 1, 1976 price level of the Company's electric  
6. plant in service at July 1, 1976?

7. A. Yes, I have.

8. Q. What is your estimate?

9. A. I estimate the trended original cost of the Company's electric plant  
10. in service at July 1, 1976 to be \$3,371,409,038.

11. Q. That is without any reference to depreciation?

12. A. Yes, that is the trended original cost as of that date.

13. Q. What, in your opinion, is the relation of such trended original  
14. cost to the current cost of construction of the Company's property?

15. A. In my opinion, the sum of \$3,371,409,038 conservatively represents what  
16. it would cost to construct or acquire the Company's electric plant as  
17. of June 30, 1976.

18. Q. What is the basis for that statement?

19. A. First, not all the property owned and in service was trended. For  
20. instance, Land and Land Rights are contained in the Trended Cost at  
21. their original costs. With the inflation of recent years, it would  
22. cost the Company substantially more to acquire the Land and Land Rights  
23. than is reflected by the June 30, 1976, original cost of \$68,006,155.  
24. Secondly, I have included several of the General Plant accounts at  
25. their original cost. It would cost the Company substantially more to

1. obtain these facilities than is reflected by their original cost.

2. Q. What is the definition of depreciation as you have used it in your  
3. study?

4. A. I have adopted the definition contained in the Federal Power Commission's  
5. Uniform System of Accounts where it is defined as follows:

6. "Depreciation", as applied to depreciable electric plant, means the  
7. loss of service value not restored by current maintenance, incurred  
8. in connection with the consumption or prospective retirement of electric  
9. plant in the course of service from causes which are known to be in  
10. current operation and against which the utility is not protected by  
11. insurance. Among the causes to be given consideration are wear and  
12. tear, decay, action of the elements, inadequacy, obsolescence, changes  
13. in the art, changes in demand and requirements of public authorities.

14. Q. What have you done to prepare yourself to express an opinion as to the  
15. depreciation or the relative condition of the property?

16. A. In order to prepare myself to express an opinion as to the depreciation  
17. or relative condition of the Company's electric plant in service as of  
18. June 30, 1976, I did the following:

19. 1. I reviewed Ebasco's last depreciation study made as of  
20. December 31, 1974 which was based on the Company's mortality  
21. experience with respect to its property history and past retire-  
22. ments of property as reflected in its accounting records.

23. 2. I reviewed the Company's plant maintenance expenditures for  
24. the period 1970 to 1975 inclusive.

1. 3. I made an inspection of the major components of the  
2. Company's physical properties.

3. 4. I reviewed and discussed with Company personnel the  
4. Company's future system planning requirements.

5. Q. What method did you use in reaching an opinion as to the depreciation,  
6. or relative condition, of the property as of June 30, 1976?

7. A. My estimate of depreciation as of June 30, 1976 is based upon the  
8. estimated average service life, mortality dispersion and age of the  
9. property in each account. The calculation of accrued depreciation  
10. applicable to trended original cost was made in accordance with  
11. the straight-line method applied on a group plan. All of the property  
12. within an account was considered as a group rather than as individual  
13. units of property to be depreciated separately. The average survivor-  
14. ship characteristics used for each account were those recommended  
15. to the Company and approved by this Commission in Carolina Power &  
16. Light's last rate case. They include an estimate of average life,  
17. classification by type of mortality dispersion in accordance with the  
18. well-known Iowa type survivor curve system and net salvage. In that  
19. study, specific estimates of average life, Iowa type survivor curve and  
20. net salvage were made for each class of property using the Company's  
21. own retirement experience as a basis of judgment. These selections,  
22. together with the age of the property, were used to estimate the  
23. average condition percent of the trended original cost within an  
24. account. The term Condition Percent is the trended original cost  
25. less depreciation expressed as a percent of the trended



1. original cost. Therefore, Condition Percent, is the complement
2. of depreciation percent and the sum of the two equals 100.
3. The method which I used to estimate depreciation in this case has been
4. found acceptable by the Staffs of the Federal Power Commission and a
5. number of State Public Utility Commissions.
6. Q. In arriving at your opinion of the amount of depreciation to apply to
7. the trended original cost at June 30, 1976, have you considered all of
8. the causes which you described in your definition of depreciation?
9. A. Yes, I have considered all of the causes of depreciation which are
10. mentioned in my definition of depreciation.
11. Q. How have you given recognition to obsolescence and other functional
12. causes of depreciation?
13. A. Obsolescence is but one cause of property retirement and it along with
14. all other factors affecting property life were considered in our
15. depreciation study. I have given recognition to obsolescence and other
16. functional causes of depreciation in the amount of depreciation
17. which I deducted from the trended original cost of the property in
18. each primary account.
19. Q. Mr. Breitling, did you make a separate determination of the amount
20. of depreciation due to each of the causes which you included in
21. your definition of depreciation?
22. A. No. I did not.
23. Q. Why not?
24. A. As a practical matter it is not possible to make such a determination
25. because electric utility property is retired from service due to a



1. combination of one or more of the causes mentioned. In most cases  
2. it is not possible to attribute the retirement to any one specific  
3. cause or to assign it among all of the causes which resulted in the  
4. property being removed from service. It is the general practice in  
5. the electric utility industry to depreciate property for accounting  
6. purposes by the use of a straight-line rate for each depreciable primary  
7. plant account. The straight-line rate selected takes into consideration  
8. the average life expectancy of the property within the account as  
9. well as any future salvage and removal cost which may occur. The  
10. average service life selected takes into account consideration of the  
11. utility's past retirement experience, the experience of the electric  
12. utility industry and the future service life expectancy based on its  
13. own system requirements. The average service life selected is intended  
14. to reflect and to take into consideration all the causes of depreciation  
15. functional as well as physical. The effect of using this method to  
16. measure depreciation is that both the original cost less depreciation  
17. and the trended original cost less depreciation of the older and rela-  
18. tively less efficient property are depreciated extensively.

19. Q. Are these principles that you followed in making your determination  
20. of the amount of depreciation which you have applied to your trended  
21. original cost estimate.

22. A. Yes sir.

23. Q. Mr. Breitling, have you determined the Trended Original Cost Less  
24. Depreciation of the Company's Electric Plant at June 30, 1976?

25. A. Yes, I have.



1. Q. What is the amount?
2. A. It is \$2,405,426,104.
3. Q. Does your estimate of depreciation, applicable to the trended original
4. cost at June 30, 1976 represent the difference between \$3,371,409,038
5. and \$2,405,426,104?
6. A. Yes, my estimate of accrued depreciation is the difference between these
7. two figures, or \$965,982,934 which is 28.7 percent of the trended
8. original cost at that date.
9. Q. Have you subdivided your estimate into the different classes of property
10. constituting electric plant in service?
11. A. My estimate is subdivided into the classes of property prescribed by
12. the Federal Power Commission's Uniform System of Accounts.
13. Q. I hand you this document entitled "Carolina Power & Light Company
14. Original Cost, Trended Original Cost and Trended Original Cost
15. Less Depreciation of Electric Plant in Service at June 30, 1976," and
16. ask if it was prepared by you or under your supervision?
17. A. Yes, it was. (Identify as Breitling Exhibit No. 2)
18. Q. Please explain this exhibit.
19. A. This exhibit sets forth my computation of the Trended Original Cost
20. and the Trended Original Cost Less Depreciation of the various
21. classes of property constituting the Electric Plant in Service at
22. June 30, 1976, of Carolina Power & Light Company.
23. Q. Please enumerate the elements of value included in, or excluded from,
23. the figures shown in this exhibit.



1. A. Land and Land Rights, Transportation Equipment, Communication Equipment  
2. and Miscellaneous Equipment Accounts have been included at original  
3. cost. The original cost of the property in all other accounts was  
4. trended to the July 1, 1976 price level. All property was considered  
5. to be depreciable except Land owned in fee. No separate allowance  
6. has been included in this Exhibit for Going Concern or other  
7. Intangible Values, Construction Work in Progress, Working Capital,  
8. or Materials and Supplies.

9. Schedule I of Breitling Exhibit No. 2 indicates for each plant  
10. account, the original cost as of June 30, 1976 as stated in the  
11. Company's books, and my determination of the Trended Original  
12. Cost and Trended Original Cost Less Depreciation for those same  
13. accounts.

14. Schedule II entitled "Carolina Power & Light Company - Supplementary  
15. Data", indicates the cost index, average life, curve type and net  
16. salvage rate I have used in my determination of the Trended  
17. Original Cost and Trended Original Cost Less Depreciation.

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CAROLINA POWER & LIGHT COMPANY

TESTIMONY OF PAUL S. BRADSHAW

- 1 Q. Please state your name and business address.
- 2 A. Paul S. Bradshaw, 336 Fayetteville Street, Raleigh, North Carolina.
- 3 Q. What is your occupation?
- 4 A. Assistant Treasurer in charge of the Budgets and Statistics Section  
5 of the Treasury and Accounting Department of Carolina Power & Light  
6 Company.
- 7 Q. Please describe your educational background and business experience.
- 8 A. I attended Southeastern University and graduated from the Accounting  
9 School of that university with a Master's Degree in Accounting.
- 10 I joined Carolina Power & Light Company in July of 1962 and have  
11 held several positions in Accounting and Finance since that time.
- 12 I am a member of the Finance Section of the Southeastern Electric  
13 Exchange and also a member of the Budgeting and Financial Forecasting  
14 Committee of the Edison Electric Institute. I have completed the  
15 Public Utility Executive Course at the Georgia Institute of Technology.
- 16 Q. What are your duties with Carolina Power & Light Company?
- 17 A. I have been responsible for the operation of the Budgets and Statistics  
18 Section since its formation in 1972. This section is composed of the  
19 Budget Unit, the Statistical Unit and Financial Analysis. Prior to  
20 formation of the Budgets and Statistics Section, I was Assistant  
21 Controller in charge of General Accounting.
- 22 Q. Please examine this document, marked "Bradshaw Exhibit No. 1," consisting  
23 of twelve pages, and state whether or not it was prepared under your  
24 supervision and direction.



1 A. Yes, it was. (Identify)

2 Q. Will you describe this exhibit?

3 A. This exhibit sets out the Balance Sheet of the Company as of  
4 June 30, 1976, and statements of income and retained earnings of  
5 the Company for the twelve months which ended on June 30, 1976.  
6 It contains notes which are an integral part of the statements.  
7 This exhibit is the same as Exhibit J filed with the application  
8 in this proceeding, in the series of exhibits containing data for  
9 the test period consisting of the twelve months ended June 30, 1976.

10 Q. Will you please examine this document, marked "Bradshaw Exhibit  
11 No. 2," and state whether or not it was prepared under your  
12 supervision and direction.

13 A. Yes, it was. (Identify)

14 Q. Please describe this exhibit.

15 A. This exhibit sets forth the original cost of the electric utility  
16 plant in service of our Company as shown on our books and records  
17 at June 30, 1976. After deducting \$25,739,649, representing the  
18 accumulated provision for amortization of nuclear fuel, the total  
19 amount of plant in service and nuclear fuel is \$2,297,085,201.  
20 The plant in service is subdivided into functional accounts. Of  
21 course, the nuclear fuel is related only to the production function.  
22 This exhibit is the same as Exhibit C in the exhibits filed in  
23 compliance with Rule RI-17.

24 Q. Will you please examine this document, marked "Bradshaw Exhibit No. 3,"  
25 and state whether or not it was prepared under your supervision and  
26 direction, and state what is shown on this exhibit.



1 A. Bradshaw Exhibit No. 3, which is the same as Exhibit E filed for the  
2 test period, the twelve months ended June 30, 1976, was prepared  
3 under my supervision and direction and states the amounts of the  
4 accumulated provision for depreciation of plant in service as shown  
5 on the books at June 30, 1976. The amounts have been adjusted to  
6 reflect depreciation for a full year on plant in service at that  
7 date. The amounts are shown by functional accounts corresponding  
8 to the functional accounts under plant in service on my Exhibit No. 2.

9 Q. Will you please state whether or not "Bradshaw Exhibit No. 4" was  
10 prepared by you or under your supervision.

11 A. Yes, it was. (Identify)

12 Q. Will you please describe this exhibit?

13 A. This exhibit shows the Company's operating revenues and operating  
14 expenses by major categories for the twelve months ended June 30, 1976.

15 Q. Have you made any accounting and proforma adjustments to the test year?

16 A. Yes. The adjustments made to the test year are summarized in  
17 Bradshaw Exhibit No. 5.

18 Q. Would you please explain these adjustments.

19 A. Yes. Adjustment No. 1 in the amount of \$300,000 is for the cost of  
20 a Management Audit by Booz, Allen and Hamilton that was ordered by  
21 this Commission. It is appropriate to include the entire amount  
22 in this case.

23 Adjustment No. 2 is necessary to charge-off the remaining one-half  
24 year of the cost of abandoning the Craven County plant site. A three  
25 year write-off was ordered by this Commission and concluded  
26 December 31, 1975. This adjustment charges expenses in the amount of



1       \$78,407.

2               Adjustment No. 3 is necessary to write-off the costs of  
3       abandoning the Madison County plant site. This plant site will  
4       not be developed, therefore, the accumulated costs of \$187,816  
5       must be written-off to operating expenses.

6               Adjustment No. 4 is to normalize the effect of hydro  
7       generation for the test year. The value of hydro generation in  
8       the test year was adjusted to the 45-year average hydro generation  
9       resulting in a charge to expense of \$899,394.

10              Adjustment No. 5 is to reflect wages and fringe benefits for  
11       the test year based on the year-end level with known increases.  
12       This requires an increase in operating expenses of \$5,471,044 and  
13       a related increase in payroll taxes of \$301,603.

14              Adjustment No. 6 is necessary to reflect in the test year  
15       the effect of a postage increase that was placed in effect December 28,  
16       1975. The effect on operating expenses would be an increase of  
17       \$147,449.

18              Adjustment No. 7 is necessary to reflect the higher cost of  
19       nuclear property insurance. Beginning January 1, 1977, the Company  
20       will establish a nuclear insurance reserve to offset possible future  
21       losses. This reserve will be established with dividends from  
22       Nuclear Mutual Limited; these dividends having previously been  
23       credited back to operating expenses. The reserve method would be  
24       advantageous because it would provide funds for a substantial loss,  
25       thus avoiding a sudden substantial cash outlay. This adjustment in  
26       the amount of \$1,419,151 is based on the deposit for 1977.



1 Adjustment No. 8 is necessary to adjust the Research and  
2 Development expenses to a current level. This adjustment in the  
3 amount of \$1,979,102 is based on the formula for Research and Development  
4 expenditures approved by the Electric Power Research Institute.

5 Adjustment No. 9 was made to adjust depreciation expense to  
6 the level of plant in service at year-end. Also included in the  
7 adjustment is the appropriate entries to fully normalize the  
8 deferred income tax effect on an end-of-period basis. The increase  
9 in book depreciation expense is \$6,186,000 with related tax effects  
10 of an increase in deferred income taxes of \$9,442,000 and a decrease  
11 in current income taxes of \$8,918,000.

12 Adjustment No. 10 in the amount of \$2,142,000 is necessary to  
13 provide book depreciation on plant placed in service from June 30,  
14 1976 through March 31, 1977.

15 Adjustment No. 11 is necessary to compensate for an increase  
16 in Social Security taxes. The F.I.C.A. taxable wage base was  
17 increased from \$14,100 to \$15,300 on January 1, 1976, thus necessi-  
18 tating an increase to the test year tax expense of \$66,394.

19 Adjustment No. 12 relates the property taxes to the year-end  
20 level of plant in service at June 30, 1976, and also provides  
21 property taxes on plant transferred through March 31, 1977. To  
22 adjust the property tax to a year-end level of plant in service  
23 required an increase in property tax expense of \$3,675,301. The  
24 property tax on plant to be transferred from June 30, 1976 through  
25 March 31, 1977 would be \$616,000.

26 Adjustment No. 13 is necessary to transfer to plant in service



1 property will be completed and ready for service from June 30,  
2 1976 through March 31, 1977. This adjustment will require an  
3 increase in rate base of \$71,210,000.

4 Adjustment No. 14 is necessary to correct an erroneous posting  
5 in May 1976. The amount of \$211,565 was inadvertently credited to  
6 Account 120.4 when it should have been posted to Account 121. This  
7 debit to Account 120.4 in the amount of \$211,565 will correct  
8 that entry.

9 Adjustment No. 15 is necessary to provide working capital  
10 needed as a result of a delay in customers paying their bills. This  
11 Commission, in Docket No. M-100, Sub 61, by Order dated 1-30-75,  
12 allowed customers additional time in which to pay their bills. The  
13 calculated additional accounts receivable required for the test year  
14 is \$2,419,000.

15 Adjustment No. 16 is necessary to eliminate from the test year  
16 the effect of deferred fuel accounting. Since fuel costs above the  
17 base are no longer deferred on North Carolina retail sales, it is  
18 proper to eliminate \$11,759,652 in revenues and \$12,234,997 in  
19 expenses from the test year results.

20 Q. Will you state whether or not the Company maintains bank balances as  
21 a part of its commitment in connection with loans obtained from  
22 banking institutions?

23 A. Yes.

24 Q. What was the amount of such bank balances supporting loan commitments  
25 and loans outstanding at June 30, 1976?

26 A. The amount of such balances then was \$9,777,000. These funds are



1 not maintained to support normal bank accounting services such as  
2 checking and collection of funds deposited, but are specifically  
3 required in connection with credit extension.

CAROLINA POWER & LIGHT COMPANY

TESTIMONY OF FREDDY R. HORNE

1 Q. Please state your name and address.

2 A. Freddy R. Horne, Raleigh, North Carolina.

3 Q. What is your occupation?

4 A. I am Supervising Analyst - Retail Cost Studies in the Rates and  
5 Regulation Department of Carolina Power & Light Company.

6 Q. Will you describe your educational and professional background?

7 A. I graduated from North Carolina State University in 1970, with a  
8 Bachelor of Science Degree in Applied Mathematics. I was employed  
9 by Carolina Enterprises in Tarboro, North Carolina as an inspector  
10 in the Quality Control Department. In June, 1971, I went to work with  
11 Carolina Power & Light Company in the Rates and Regulation Department.

12 During the five years that I have worked for CP&L, I have been  
13 involved in the development of the studies that were necessary for the  
14 filings and presentations of retail and wholesale rate increase requests  
15 before this Commission and before the South Carolina Public Service  
16 Commission and the Federal Power Commission.

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

18 A. Yes, I have testified before the South Carolina Public Service Commission.

19 Q. What was your assignment in the preparation of this rate increase request?

20 A. My primary responsibility was the assignment and allocation of rate base  
21 components, revenues, expenses, and capital structure to the North  
22 Carolina retail operations, which are subject to the jurisdiction of

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1 this Commission. The results of these assignments and allocations  
2 for the twelve months ended. - June 30, 1976 are presented in the  
3 testimony of Mr. Bradshaw and Mr. Davis, to whom I furnished the  
4 results of the allocation of the system totals to determine the  
5 amounts for the North Carolina retail operations.

6 I was also responsible for preparation of the June 30, 1976  
7 Retail Operations Cost Allocation Study based on the present rates  
8 annualized. This study provides an indication of the relative rates  
9 of return earned by the various retail customer rate classes. My  
10 testimony will include a discussion of the procedures used to  
11 accomplish the study and the results obtained for the retail rate classes.

12 Q. Were the allocations to obtain the North Carolina retail jurisdictional  
13 operating results accomplished under your supervision and direction?

14 A. Yes, they were, and they consisted of methods previously approved by this  
15 Commission. In summary, I would state that the power supply allocation  
16 was accomplished on the basis of coincident peak demand. This allocation  
17 method states the power supply responsibility for production and  
18 transmission cost on the basis of the demand at the time of our annual  
19 summer peak demand. This method properly reflects the cost of providing  
20 service and relates our revenue levels to the peak load of our system.  
21 We have used this peak load cost formula in our last three rate filings  
22 prior to this case and recommend its approval again in this proceeding.  
23 The allocation of the remaining cost items was accomplished in the same  
24 manner as in our previous rate filings.

25 Q. Would you please explain the jurisdictional allocation study in more  
26 detail?



1 A. The results of system operations including adjustments were  
2 apportioned to retail service in North Carolina by a series  
3 of steps which began with a study to identify those items  
4 -related solely to service to specific classes of customers.  
5 Those items were then assigned directly to the related classes.  
6 Those matters which arose from joint-use and thus could not be  
7 assigned directly to specific classes were allocated by the  
8 application of standard analytical methods. All items were  
9 grouped according to the functions to which they relate--  
10 production, transmission, distribution, administrative and general,  
11 sales and customer accounting. Allocable items were also classified  
12 as to whether they were demand-related, energy-related, or customer-  
13 related. Allocations of demand-related items were made using coin-  
14 cident peak demand factors. Energy-related items were allocated by  
15 using kilowatt-hour ratio factors. Customer-related items were allo-  
16 cated using average number of customers.

17 Q. Will you please explain briefly how each major revenue, expense, and  
18 rate base item was allocated, beginning with operating revenues?

19 A. Operating revenues from sales at retail in North Carolina are readily  
20 identified and therefore have been assigned directly to the North  
21 Carolina retail class. Other operating revenues consisting of a  
22 number of miscellaneous items were either assigned directly or  
23 apportioned by appropriate analysis and factors.

24 Q. Please describe the allocation of the operation and maintenance expenses.

25 A. Before the operation and maintenance expense items could be  
26 functionalized into categories for allocation, it was necessary  
27 to prorate the supervision and engineering expenses for each



1 expense account. An analysis provided the amount of the payroll  
2 charges included in the total expense items. The respective  
3 supervision and engineering expenses were then apportioned to  
4 the various expense accounts based on this labor component. By  
5 this means the primary accounts were restated to include a pro-  
6 rated portion of the supervision and engineering expense.

7 The expenses as thus restated were then classified as either  
8 energy-related, demand-related, or customer-related. The  
9 production expense items classified as energy-related are fuel,  
10 the energy portion of purchased power, steam boiler and electric  
11 plant maintenance, nuclear reactor and electric plant maintenance,  
12 hydro electric plant maintenance, and other power generating and electric  
13 plant maintenance. The remaining power production expenses were  
14 classified as demand-related.

15 The transmission expense was assigned between power supply  
16 production and power supply transmission based on the ratio of  
17 the plant in service. The distribution expense was divided  
18 functionally between substations, overhead lines, underground  
19 lines, meters, and other distribution expense. These functionalized  
20 expenses were assigned to each state and then allocated to the  
21 jurisdictional classes within the states on the basis of the  
22 respective distribution plant accounts.

23 The customer accounting expense was assigned based on a  
24 specific analysis which separated the cost involved between  
25 wholesale and retail service in each state. A portion of the  
26 expense of the customer services personnel who are directly  
27 involved in wholesale sales was assigned to the wholesale

1 operation in each state. The remaining sales expense was  
2 assigned to the retail class.

3 Regulatory expense has been analyzed and assigned to the  
4 respective jurisdictions. The remaining administrative and  
5 general expenses were allocated to the customer classes  
6 principally by the use of labor factors. Certain items such  
7 as property insurance and maintenance of general plant were  
8 allocated on plant ratios.

9 The operation and maintenance expense adjustments were  
10 allocated on the same basis as the items to which the adjust-  
11 ments related.

12 Q. Would you please explain the allocation of the depreciation  
13 expense?

14 A. Depreciation expense was assigned in accordance with the assign-  
15 ment and allocation of the functional plant to which the depre-  
16 ciation related. The adjustments to the depreciation expense  
17 were similarly functionalized and allocated on the basis of the  
18 respective functional plant account.

19 Q. Please describe the allocation of the remaining operating  
20 expense items.

21 A. Taxes other than income were assigned for allocation as related  
22 to labor, property, KWH sales, or revenue and were then allocated  
23 by the respective allocation factors. Unemployment taxes were  
24 considered labor-related, property taxes were considered related  
25 to plant investment, the South Carolina electric power generation  
26 tax was classified as KWH-related, and revenue taxes such as the



1 North Carolina gross receipts tax were treated as related to revenue.

2 State income taxes were assigned specifically to the respective  
3 states and then allocated to classes on the basis of the ratios of  
4 income before taxes. Federal income taxes were calculated for states  
5 and for classes using allocated taxable income. The provision for  
6 deferred income taxes and the investment tax credit were functionalized  
7 into production, transmission, distribution and general categories, and  
8 then allocated on the basis of the respective plant allocations.

9 Q. Will you please explain the allocation steps used to determine  
10 the portion of the electric plant used in providing service to  
11 North Carolina retail operations?

12 A. The allocation of electric plant in service consisted of two  
13 basic steps. The first step was to specifically assign all items  
14 of cost for which sufficient information allowed a specific  
15 separation between classes. This step involved separating the  
16 cost associated exclusively with the wholesale operation and also  
17 joint costs which were allocated on a specific basis. The second  
18 step was to allocate the costs where the joint use was so thorough  
19 that a specific analysis was not practical. These costs were  
20 assigned for allocation to the classes of service and the alloca-  
21 tions were accomplished by the use of allocation factors developed  
22 for the respective classes.

23 Allocations of the power supply production and power supply  
24 transmission facilities were accomplished using the coincident  
25 peak demand allocation factors. All allocations of facilities  
26 below the level of power supply transmission were accomplished



1 by use of NCP demand allocation factors. The NCP factors for  
2 each of these specific allocations were developed by an analysis  
3 of the demands imposed on the facilities being allocated.

4 The production plant in service was allocated between  
5 classes of service by KW demand allocation factors developed  
6 from system load data. These KW demand allocation factors were  
7 based on data adjusted to the production level. No production  
8 plant account dollars were specifically assigned to classes of  
9 service. The transmission plant in service was allocated  
10 between the classes by KW demand allocation factors developed  
11 from system load data. No transmission plant account dollars  
12 were specifically assigned. It was necessary, however, to  
13 separate the transmission plant into two levels for allocation  
14 by KW demand factors. Since the function of the step-up trans-  
15 formers at the various generating plants is considered to be  
16 production, these facilities were allocated using the production  
17 KW demand allocation factors. All other transmission facilities  
18 were allocated using transmission KW demand allocation factors.

19 The investment in distribution facilities was assigned  
20 between the states on a geographical basis as shown directly on  
21 the books of the Company and between the wholesale and retail  
22 classes on the basis of specific analysis. General plant was  
23 first placed in the functional categories in its relationship  
24 of use with the production, transmission, or distribution  
25 facilities. The amounts thus functionalized were then

1 assigned on the same basis as the respective functional plant  
2 accounts. The item for intangible plant was assigned on the  
3 basis of the other electric plant. Adjustments to Plant in  
4 Service were functionalized and allocated by the functional  
5 plant which it adjusted.

6 The depreciation reserve distributed on the books to the  
7 functional plant from which it results was assigned in accor-  
8 dance with the plant assignment. Adjustments to the depreciation  
9 reserve were allocated similarly.

10 Q. Would you please now describe the allocation of the other rate  
11 base items?

12 A. Net nuclear fuel, which consists of nuclear fuel assemblies in  
13 stock and in the reactor, and spent nuclear fuel, was allocated  
14 by the use of KWH energy factors. The fuel portion of materials  
15 and supplies was allocated by energy factors. Plant materials  
16 and supplies are related to transmission and distribution, thus  
17 they were allocated by a subtotal of these two plant functions. The  
18 minimum compensating bank balance portion of the cash working capital  
19 allowance was assigned in accordance with plant investment. Prepay-  
20 ments were assigned by specific analysis or by allocations based on  
21 plant investment. The cash allowance was assigned in the same  
22 proportion as the operation and maintenance expenses. Deducted from  
23 cash working capital were average tax accruals and customer deposits.  
24 The tax accrual offset was allocated in accordance with plant invest-  
25 ment. Customer deposits were directly assigned to the proper juris-  
26 diction. Adjustments to working capital were specifically assigned  
27 or allocated based on the items which they adjusted.



1 Q. Where are the results of applying these allocation procedures  
2 to the June 30, 1976 test period shown in this proceeding?

3 A. The results of my jurisdictional allocation study are shown in  
4 Davis Exhibit No. 1. I provided to Mr. Davis the North  
5 Carolina retail allocated portion of the cost of service that  
6 he is presenting in his testimony.

7 Q. Will you please now turn to the next part of your testimony  
8 relating to the procedures and results of the Retail Operations  
9 Cost Allocation Study for the June 30, 1976 test period. Please  
10 summarize what is meant by a retail operations cost allocation study.

11 A. A retail operations cost study allocates system cost and develops  
12 a rate of return for each of the retail classes. The study  
13 allocates the revenues, expenses, and rate base between the  
14 various retail classes. The rate of return is derived by  
15 measuring net operating income as a percent of average net  
16 original cost rate base.

17 Horne Exhibit No. 1 describes the procedures that are used  
18 in our retail cost allocation studies. The methods and judgment  
19 used in our retail cost allocation studies are extensions of the  
20 methods used in the preparation of jurisdictional allocation  
21 studies. While advice for portions of the study is obtained from  
22 consultants, the studies are accomplished by Company personnel.  
23 Recognized and accepted allocation procedures are used through-  
24 out the studies. For the major components, these procedures  
25 conform to those used in the recent rate hearings before the  
26 regulatory commissions in the two states which the Company serves.

1 Q. What is shown in Horne Exhibit No. 2?

2 A. This Exhibit presents the results of our Retail Operations Cost  
3 Allocation Study for the year ended June 30, 1976, on the basis  
4 of the present rates annualized.

5 Q. Was the June 30, 1976 Retail Operations Cost Allocation Study  
6 prepared as described in Horne Exhibit No. 1?

7 A. Yes, the general study procedures described in Horne Exhibit  
8 No. 1 were used for the June 30, 1976 study. Since 1972, CP&L  
9 has completed a retail cost allocation study on each calendar  
10 year. These studies were completed in detail and used the procedures  
11 which I have described. Studies using a June 30 test period are not  
12 prepared unless required for specific rate studies. At the time the  
13 June 30, 1976 study presented in my testimony was completed, the  
14 Company had available a 1975 retail operations cost allocation study.  
15 The June 30, 1976 study is an update of the 1975 study. That is,  
16 the system results were taken from the books and records of the  
17 Company for twelve months ending June 30, 1976; however, certain  
18 allocation factors from the 1975 study were used to allocate the  
19 system results to the various rate classes.

20 Q. Please explain in more detail which allocation factors are from the  
21 1975 Retail Operations Cost Allocation Study.

22 A. The major allocation factors are actual for the test year ended June 30,  
23 1976. These include the assignment of sales revenue to each rate class,  
24 coincident peak demand factors for power supply production and trans-  
25 mission facilities, and the production level KWH factor used primarily



1 to allocate fuel and other energy related items. Allocation  
2 factors for the minor cost items such as sales expenses,  
3 customer accounting expenses, and some distribution related  
4 expenses are taken from the 1975 Retail Cost Allocation Study.

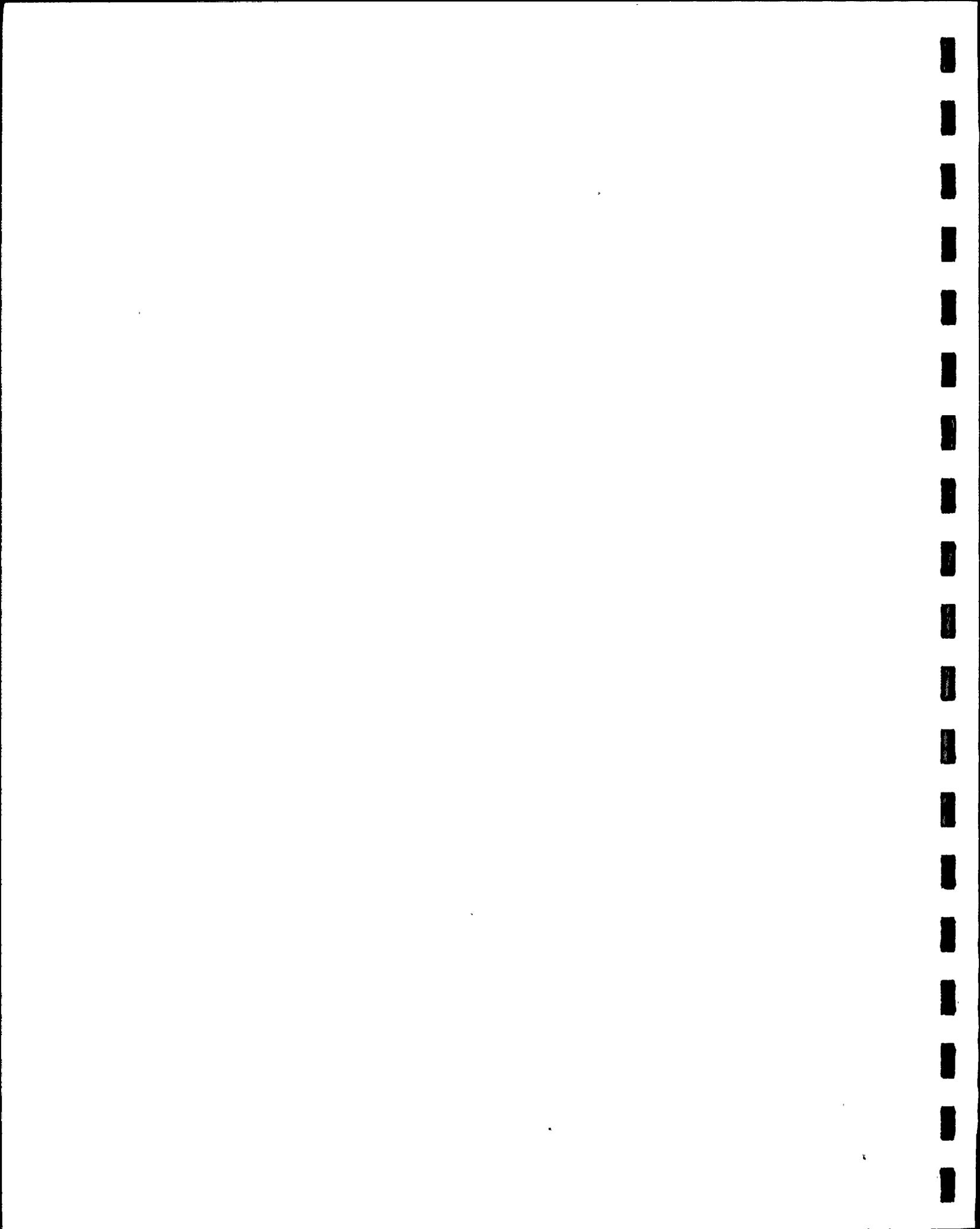
5 Q. What adjustments are included in the June 30, 1976 Retail  
6 Operations Cost Allocation Study?

7 A. Adjustments have been made to include the effect of known  
8 changes during the year. However, these adjustments do not  
9 include all the items that would be necessary if the results  
10 of this type of study were to be used to determine the rate  
11 levels of the Company.

12 Fundamental to appraising the results of this type of allo-  
13 cation study is a recognition that the use of an average original  
14 cost rate base without all of the adjustments normally included  
15 in a ratemaking proceeding is appropriate in a study of the  
16 relationship of rates to each other but not in considering the  
17 adequacy of the overall rate of return.

18 Q. Does this Study provide the information which is necessary in the  
19 establishment of the rates for the various retail classes of  
20 service?

21 A. No. This Study only provides an indication as to the relative  
22 rates of return that are being earned by the various rate classes.  
23 It attempts to analyze and consider cost factors in providing ser-  
24 vice to the various customer classes. This study, however, does  
25 not consider all of the factors which are essential in setting rate  
26 levels and the design of the resulting rate schedules.



1           The end results of the accounting and the engineering procedures  
2 involved in cost allocation studies do not establish value of service  
3 or even levels of reasonable rates. The results simply reflect the  
4 total cost assigned to the rate classes by following basic principles  
5 with logical and supportable procedures for allocating joint costs.  
6 The resulting rates of return can serve only as a guide, under the  
7 assumptions of the study, to the relative earnings of the various rate  
8 classes. Proper rates can be established only after consideration of  
9 all the factors relevant to their justness and reasonableness. A  
10 retail class cost allocation study is one of the aids in that task.