Q PLEASE STATE YOUR NAME AND ADDRESS.

A My name is J. Bertram Solomon. My business address is 1000 Crescent Avenue, N.E., Atlanta, Georgia 30309.

Q PLEASE OUTLINE YOUR FORMAL EDUCATION.

A I received the degree of Master of Business Administration from Georgia State University in 1973. My area of concentration was Finance. I also received the degree of Bachelor of Science in Industrial Management from the Georgia Institute of Technology in 1972.

Q PLEASE STATE YOUR PROFESSIONAL EXPERIENCE.

A As a Cooperative student at Georgia Tech, I gained approximately two years' work experience as an assistant engineer in an industrial production setting. After my graduation from Georgia Tech in 1972, I worked approximately one and one-half years as a program manager for a management consulting firm and for another one and one-half years as a project analyst for a resort development firm. I was employed by the Southern Engineering Company of Georgia, my present employer, in January 1975. Since that time, I have had assignments in both the retail and wholesale rate departments of my Company, primarily in the area of electric utility rates. In the retail area I have participated in the preparation of rate increase filings for both G & T and distribution rural electric membership cooperatives as well as the determination of revenue requirements and the proper rate design for unregulated rural electric membership cooperatives. My primary activities, however, have been in the wholesale area where I have participated in the analysis of approximately one and one-half dozen Federal Energy Regulatory Commission filings of private utilities operating in eight different states. I also participated in the preparation of testimony and exhibits for several of these rate filings. Additionally, I have participated in the preparation of retail and wholesale allocated cost of service studies and power cost projections.

Q HAVE YOU EVER TESTIFIED IN OTHER COMMISSION PROCEEDINGS?

A I have testified before the Federal Energy Regulatory Commission in proceedings involving the Public Service Company of Indiana, Docket No. ER76-149; Georgia Power Company, Docket Nos. E-9091, E-9521 and ER76-587; and Carolina Power & Light Company, Docket No. ER76-495. I have also testified before the Public Service Commission of Kentucky and the Texas Public Utility Commission in both wholesale and retail rate proceedings.

Q BY WHOM IS SOUTHERN ENGINEERING COMPANY OF GEORGIA RETAINED IN THIS PROCEEDING?

A Southern Engineering is retained by North Carolina Electric Membership

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Corporation and Four County Electric Membership Corporation (Cooperative Intervenors). Witness Gross and I will be the Cooperative Intervenors' Witnesses in this proceeding.

Q WHAT WAS YOUR ASSIGNMENT IN THIS PROCEEDING?

A My assignment was twofold: First, I was to review the direct testimony and exhibits and other available information of the Carolina Power & Light Company (CP&L) concerning the cost to serve CP&L's wholesale Cooperative customers. Specifically, I was to consider whether the methods employed by CP&L for Period II to develop the rate base and operating expenses shown in the Company's cost of service study were proper and in accord with Commission precedent and sound ratemaking procedures and whether the requested rate of return is fair and meets the standards established by the Supreme Court in its decisions in the Bluefield and Hope cases. Secondly, I was to prepare an allocated cost of service study which includes the adjustments to the Company's cost of service found to be necessary by Mr. Gross and I and which accurately reflects the rates of return which would be earned under the Company's wholesale electric tariff RS-11 during the Period II test period.

Q WOULD YOU PLEASE SUMMARIZE THE TESTIMONY THAT WILL BE GIVEN BY THE OTHER COOPERATIVE INTERVENOR WITNESS IN THIS PROCEEDING?

A Mr. Gross is providing testimony on corrections to CP&L's Period II estimated CP demands, the correct treatment of the SEPA wheeling loads in calculating the demand allocation factors and on the appropriate rate design.

Q DOES CP&L CURRENTLY HAVE ANY OTHER RATE INCREASE REQUESTS PENDING BEFORE THIS COMMISSION?

A Yes, Docket No. ER76-495 in which the Company's proposed rate RS-11 requesting an increase in annual revenues from its Cooperative customers of 34% was filed in January, 1975 and is currently pending before this Commission. The Administrative Law Judge (ALJ) rendered his initial decision in that docket September 7, 1977.

In settlement discussions in the instant docket, the parties were able to agree on a stipulation covering a few issues which are common to both proceedings. In the stipulation dated March 16, 1978, the parties agreed that, for purposes of this docket they will accept the Commission's final decision in Docket No. ER76-495 with respect to the following issues as governing the disposition of those issues in this docket:

a) demand allocation factor method (i.e., whether demand-related costs should be allocated on the basis of four coincident peaks, twelve coincident peaks, or on alternative method chosen by the Commission)

b) fuel stock allocation method

c) interest expense syncronization

d) depreciation rates and

e) comprehensive interperiod tax allocation.

The parties also stipulated that Plant in Service should be calculated on the basis of the average of the 13 monthly balances as was done by the Company in this proceeding.

Q WOULD YOU BRIEFLY SUMMARIZE THE CONCLUSIONS WHICH YOU AND MR. GROSS HAVE REACHED AS A RESULT OF STUDYING CP&L'S COST OF SERVING ITS WHOLESALE CUSTOMERS?

A The cost of service study presented by the Company in this proceeding significantly overstates the cost of providing service to the Cooperative customers. The following major errors have been made by CP&L in its Period II cost of service study, necessitating adjustments (this list excludes the issues which were included in the stipulation discussed above):

Witness Gross

1. CP&L has improperly estimated the monthly coincident peak demands in Period II for the Cooperatives.

2. CP&L has erred in its treatment of its SEPA wheeling load in the calculation of demand allocation factors.

3. CP&L has improperly designed its rates in that:

a) it has failed to recognize the different characteristics of its Cooperative and Municipal customers by providing only one rate for wholesale service,

b) it has failed to recognize the differential in the cost of serving loads from its transmission system versus serving loads at the distribution level by providing the same charges for service at both the transmission and distribution level,

c) it has included a 95% demand ratchet which is totally unjustified by record evidence and completely inconsistent with the use of the twelve-month average demand allocation method decided to be just and reasonable by the Administrative Law Judge in Docket No. ER76-495, and

d) it has unjustly and unreasonably restricted its provision for totalized billing.

Witness Solomon

1. CP&L has failed to match the Period II test year revenues and expenses.

2. The Company has proposed improper base rate and fuel adjustment charges based upon an unjust amortization for the previously capitalized value of the uranium and plutonium material contained in spent nuclear fuel assemblies, for the disposal cost of these spent fuel assemblies and for estimated future costs of disposal of nuclear fuel currently in its reactors.

3. In calculating its cash working capital allowance, CP&L used the 45-day formula of 12.5% of total O & M expenses less purchase power in lieu of presentation of evidence on the actual amount cash working capital required. I have conducted a lead-lag study of the Company's cash working capital requirements and have found that the receipt of revenues for service rendered actually leads rather than lags the payment by the Company for the goods and services it requires to provide that service. Thus, the Company has no requirement for its customers to provide additional cash working capital.

4. The Company has unjustly inflated its Period II rate base by using unreasonably excessive rates for capitalizing Allowance for Funds Used During Construction.

5. CP&L has requested an unfair rate of return by reason of its use of a common equity return on the customer contributed unamortized investment tax credit and an excessive return on common equity.

Q HOW WERE THE ISSUES SUBJECT TO THE MARCH 16, 1978 STIPULATION TREATED IN YOUR COST OF SERVICE STUDY?

A For purposes of this filing, I have followed the ruling of the Administrative Law Judge on each of these issues.

I used the demand allocation factors calculated by Mr. Gross based upon the average of the twelve monthly coincident peaks method. In applying this method, Mr. Gross used his own estimate of the twelve monthly coincident peak demands for the wholesale customers and he corrected the Company's treatment of its SEPA wheeling load. This correction also called for the removal of the revenue credit for wheeling revenues shown on Cooperative Intervenor Exhibit No. ___ (JBS-1), page 5.

The fuel stock was allocated by the production level demand allocation factor.

The interest expense was syncronized by applying the return component for long term debt shown on Cooperative Intervenor Exhibit No. ___ (JBS-8), page 8 to the total rate base as adjusted.

The depreciation rates of the Company were adjusted by correcting the net salvage ratios, the service life of certain steam production plants and certain nuclear salvage factors used in the Company's Exhibit No. ___ JB-1 to reflect the Judge's decision in Docket No. ER76-495. A summary of the calculation of the revised depreciation expense and accumulated provision for depreciation is shown on Cooperative Intervenor Exhibit No. ___ (JBS-3).

The Company's use of comprehensive interperiod income tax allocation was left unadjusted.

The Plant in Service used by the Company was also left unadjusted.

Q HOW WERE THE OTHER ISSUES LISTED ABOVE TREATED IN YOUR COST OF SERVICE STUDY?

A The Power Supply Production (PSP) and Power Supply Transmission (PST) demand allocation factors as computed by Mr. Gross were substituted for the Company's four-month average PSP and PST.

My recommended adjustments to revenues, expenses and rate base were made at the appropriate places in my cost of service study and were clearly marked as adjustments.

My recommended overall rate of return on rate base was used in the determination of the allowable increase (decrease) shown on Cooperative Intervenor Exhibit No. ___ (JBS-1), page 2.

Q WHAT WAS THE EFFECT ON THE COOPERATIVE INTERVENORS OF MAKING THESE CHANGES TO THE COMPANY'S COST OF SERVICE?

A As can be seen on page 2 of Cooperative Intervenor Exhibit No. ___ (JBS-1), the adjusted rate of return under the present rates (RS-11) during Period II would be 10.897%. Before the corrections recommended by Mr. Gross and I, the Company showed a rate of return of 8.873%. Using my recommended rate of return, my adjusted cost of service shows that revenues should be decreased by $4,053,979 (7.42%) for the Cooperatives below the level of the RS-11 rates as opposed to the Company's requested increase of $4,084,941 or 7.48%

Q PLEASE EXPLAIN HOW CP&L HAS FAILED TO PROPERLY MATCH PERIOD II TEST YEAR REVENUES AND EXPENSES.

A The Company made two errors which result in this mismatch of revenues and expenses. One of them, discussed by staff witness Shulman, is the mismatch of fuel revenues and fuel expenses resulting from the Company's method of booking fuel revenues and expenses. I agree in principle with this adjustment; however, as a result of the second mismatch discussed below it is necessary to recalculate the required adjustment.

The second mismatch results from the Company's practice of booking revenues during the month bills are rendered as opposed to during the month for which service is rendered. For instance, the Company may render its bill for service rendered during the month of January on the 5th of February; the costs of providing service are incurred during the month of January, but the revenues are booked as February revenues. The result of this procedure is that the Period II expenses are for the months of January through December, 1977, while the revenues are for the period December, 1976 through November, 1977. I have corrected this mismatch in revenues and expenses by eliminating the revenues included for December, 1976 and adding the revenues for December, 1977 (which were reported in CP&L's filing as January, 1977 and January, 1978, respectively). The computation of this adjustment is shown on Cooperative Intervenor Exhibit No. ___ (JBS-4).

Q WHY IS IT NECESSARY TO RECALCULATE STAFF'S FUEL REVENUE/EXPENSE SYNCRONIZATION ADJUSTMENT?

A Mr. Shulman assumed that the fuel adjustment factor (FAF) was calculated on the basis of fuel expenses incurred in the second month preceding the month when service was rendered. However, the FAF is actually calculated on the basis of fuel expenses incurred in the second month preceding the month when the bill is rendered which is the first month before the month when service is rendered.

I have recalculated this syncronization and the results are shown on Cooperative Intervenor Exhibit No. ___ (JBS-4).

Q WHAT IS THE NET RESULT OF MAKING BOTH SYNCRONIZATION ADJUSTMENTS YOU DESCRIBED ABOVE?

A Total wholesale revenue should be increased by $43,172 composed of a decrease in Cooperative revenue of $46,578 and an increase in Municipal revenue of $89,750.

Q WHY DO YOU FIND THE COMPANY'S PROPOSED AMORTIZATION FOR PREVIOUSLY CAPITALIZED SPENT NUCLEAR FUEL ASSEMBLIES, THE ESTIMATED COSTS OF THEIR DISPOSAL, AND THE ESTIMATED FUTURE COSTS OF DISPOSAL OF NUCLEAR FUEL IN THE REACTORS TO BE UNREASONABLE AS THE BASIS OF SETTING RATES IN THIS PROCEEDING?

A There are two major reasons. First, the decision to charge this amortization and estimated costs seems to have been founded upon the assumption that

there will never be reprocessing of spent nuclear fuel for use in commercial nuclear generating facilities in the United States. As shown by the testimony of intervenor witness Dr. Thomas S. Elleman, this is an erroneous assumption. At most, there is a temporary moratorium on such reprocessing, and it appears logical from the testimony of Dr. Elleman that this moratorium will be short lived. To collect these amounts based upon estimates of costs which may or may not be incurred over a large number of years in the future would be highly unreasonable.

The second major reason for rejecting the Company's inclusion of these costs is that a major portion of the costs are based upon estimates of cost to be incurred in the future which have not been supported as being reasonable by CP&L in this proceeding. These future costs, if indeed they are ever incurred, are more properly collected after their occurance at some future date when their magnitudes are more reasonably known.

Q WHAT IS YOUR RECOMMENDATION FOR THE TREATMENT TO BE GIVEN THESE ITEMS IN THE PERIOD II COST OF SERVICE IN THIS PROCEEDING?

A It is my recommendation that the $1,007,630 for the amortization of the spent nuclear fuel assemblies and the $1,319,156 for the amortization of the disposal cost of those assemblies or a total of $2,326,786 be removed from the Period II cost of service. It is totally unreasonable to charge the customers an additional $1,007,630 per year on the basis of such an abrupt change in long-standing government policy which flys directly in the face of logic. This is especially unreasonable in light of the fact the Company is currently being compensated by its customers for carrying as an asset the $5,038,150 value which is the basis for this charge. Additionally, in the highly unlikely event that the Company's assumption is correct and it becomes clear that spent nuclear fuel will never be reprocessed in this country for use in nuclear generating units, the Company can be compensated then for writing off the value of the uranium and plutonium material contained in the spent nuclear fuel assemblies.

The $1,319,156 per year additional charge should certainly not be allowed since as discussed above this figure is based upon estimated future costs for which the Company can be compensated after they are incurred.

Likewise the estimated long run cost of $14,627,607 for permanent disposal of nuclear fuel now in the reactors should be removed from the test year expenses and, thus, should not be allowed to flow through the fuel clause.

The expense, rate base and revenue adjustments for these items are shown on Cooperative Intervenor Exhibit No. ___ (JBS-7).

Q WILL YOU PLEASE EXPLAIN WHY YOU USED A LEAD-LAG STUDY TO CALCULATE CP&L'S CASH WORKING CAPITAL INSTEAD OF THE 45-DAY FORMULA USED BY CP&L?

A In the past, the Commission has allowed companies to use 45 days operation and maintenance expense less purchased power for cash working capital allowance. As cited by Staff, however, opinion as to the current value of this formula is changing. In particular, the Administrative Law Judge for the previous CP&L case, ER76-495, found that use of the 45-day allowance would cause an unjust result. Moreover, the ALJ relied on a lead-lag study to show that the lag between CP&L's payment of expenses and receipt of revenues was not 45 days but only 2 days! It is patently unjust and unreasonable to allow the use of 45 days working capital when no such lag exists. Therefore I have conducted a lead-lag study to determine the cash working capital actually needed by CP&L.

Q PLEASE EXPLAIN THE CONCEPT OF ALLOWING A CASH WORKING CAPITAL COMPONENT IN THE RATE BASE.

A The Company is required to render service to its customers on a continuous basis and in so doing must employ the use of goods and services on a continuous basis. Meters are normally read at the end of the month (t) and it then requires time to prepare the bills for that month (t), send them out and then receive cash payment for the metered service. Thus, the Company does not normally receive payment for service rendered during one month (t) until the middle or latter part of the next month (t + 1). To the extent that the Company must pay for the goods and services consumed in providing service during that month (t) prior to receiving payment from customers there is a requirement for a short-term investment to be made in carrying these costs.

As an example, let us assume a 30-day month wherein service is rendered, that the Company is required to make daily payments as goods and services are consumed in providing the electric service and that it takes a total of 30 days after the end of the month to prepare and mail the bills and then receive the money in hand to cover the cost of providing that electric service. On average the cost of providing the service was paid by the Company at the mid-point of the service period (15 days), but the customer's payment was not received for 30 days after the end of the service period. In this scenario, the Company's net lag would be a total of 45 days. This is the same net lag reflected in the standard 45-day formula relied upon by many companies as an approximation of their cash working capital requirement. Obviously, all the costs upon which rates are established and the customer's bill is computed are not paid on the exact day the electric service is rendered. Thus the 45-day formula must be viewed as an estimate of the net of the leads and lags of all these cost items.

As pointed out by the Staff and as I discussed above, one of the basic precepts of ratemaking in this country and, indeed, of this Commission is that rates must be based on a matching of the revenues and the costs incurred in the rendition of service. The costs included by this Commission in establishing these rates are basically: operation and maintenance expenses, depreciation, taxes and the cost of capital. These items are

all a part of the rates paid by the customer for the current costs to the Company of providing service and, except to the extent there are non-cash items included or items the carrying costs of which have already been provided for through rate base additions or deductions, since they are converted to cash by the customer, they should all be included in a lead-lag study to determine the actual working captial requirement of a Company. I have therefore reflected all of these items in my study shown in Cooperative Intervenor Exhibit No. ___ (JBS-5).

Q WHAT ARE THE RESULTS OF YOUR LEAD-LAG STUDY?

A As shown on page 1 of Cooperative Intervenor Exhibit No. ___ (JBS-5), CP&L actually experiences a net lead in receipt of revenues to cover current cash expenditures rather than a lag. Therefore any allowance of cash working capital would be unjust and unreasonable.

Q BRIEFLY EXPLAIN THE RATIONALE USED IN DEVELOPING THE LEADS AND LAGS IN YOUR STUDY.

A In conducting my lead-lag study, I used the same basic methodology as utilized by the ALJ in ER76-495 and by Staff in the instant case. Based on data supplied by the Company, I determined for each expense the number of days from the time the expense was incurred in providing electric service until the payment for that expense was made. I then determined the number of days from the time service was rendered until payment for that was received. The difference between these two numbers produced the overall net lead or lag experienced by the Company.

I have divided my study into three areas - O & M expenses, taxes, and cost of capital. I have also shown a subtotal for O & M expenses and taxes and then a total including the cost of capital items. For each area I assumed that the expense or liability is incurred continuously during the entire period in question or on the average at the midpoint of the period; i.e., on the 180th day of the year if the period is a year.

For example, let us consider the lag for Federal income tax. CP&L pays Federal income tax on a quarterly basis. The first quarter payment is due on April 15 which allows for a lag of 60 days, 45 days from the average date on which the tax was incurred plus the 15 days remaining after the end of the quarter before payment is due. The three other quarterly payments are due June 15, September 15, and December 15, respectively. Each of these dates produce a lag of 30 days, 45 days from mid-quarter to the end of the quarter less 15 days for payment prior to the end of the quarter. The weighted average lag that results is 37.5 days making the conservative assumption that one-fourth of the annual tax liability will be paid each quarter.

In determing the lag for fuel expense I first grouped the suppliers according to the terms of the four types of payments as provided by

CP&L in response to Cooperative Data Request Item No. I-1. For fuel received from suppliers in Group A, the terms call for payment on the 10th of the following month for fuel received the 1st through the 15th or payment on the 25th of the following month for fuel received the 16th through the end of the month. Thus the lag in both instances is 32.5 days, 7.5 days from the midpoint of the fifteen days during which the fuel is received plus 25 days remaining until payment is due. Including the lag for the other three groups and freight charges produces a weighted-average lag of 24 days for fuel expense.

I have followed this basic methodology for determining the lag for each cost shown in my study.

I have also determined that CP&L experiences a 35-day lag in receiving payment from its customers. This revenue lag is based on 15 days from rendition of the service until the end of the month, 5 days to render the bill and 15 days for payment.

Q IN YOUR EXHIBIT NO. ___ (JBS-5) YOU HAVE INCLUDED FEDERAL TAXES, INTEREST ON LONG TERM DEBT, PREFERRED STOCK DIVIDENDS AND COMMON STOCK DIVIDENDS, NONE OF WHICH THE ALJ ALLOWED IN HIS INITIAL DECISION FOR ER76-495. PLEASE EXPLAIN WHY YOU INCLUDED THESE ITEMS.

A As I explained above, each of these items represents a cost that the Company must pay and that is therefore included in the revenues collected from the customers just as any other cost to the Company. The collection of the dollars associated with these items represent, therefore, cash which the Company has on hand contributed by the customers to meet its cash needs. These funds must be used in this manner since they are not capital contributions for which there would have to be a rate base reduction nor investments in short-term interest-bearing instruments for which there would have to be an interest income credit to the cost of service.

Finally, I want to reiterate that these items represent costs which have been used in matching the revenues to be paid on an annual basis with the costs incurred in rendering service during the same period and, as such, none of them are contributions of capital, but rather are payments for the cost of capital. In the past these items have many times been reviewed in the context of making offsets or additions to the allowance under the 45-day formula rather than in the context of a full, detailed study of the actual cash working capital requirements of a Company. As shown above, when reviewed in the context of a comprehensive lead-lag study, it is necessary to include the payments and receipt of revenues for each of these cost items.

Q MR. SOLOMON, WHY ARE YOU RAISING AS AN ISSUE IN THE INSTANT DOCKET, WITH A PERIOD II TEST YEAR OF 1977, THE METHOD OF CALCULATING THE PROPER AFUDC RATES FOR CAPITALIZING AFUDC DURING PREVIOUS YEARS GOING BACK AS FAR AS 1969?

A The rates used to capitalize AFUDC in prior years vitally affects the current test period cost of serving the wholesale customers since the current rate base includes AFUDC capitalized in prior years.

Q HAVEN'T THE AMOUNTS OF AFUDC CAPITALIZED IN PRIOR YEARS BEEN REVIEWED AND APPROVED BY THE AUDITING STAFF OF FERC?

A Prior to January 1, 1977 when Order No. 561, issued in Docket No. RM 75-27 became effective, there were no detailed guidelines for the determination of AFUDC capitalization rates. During that time, the audits by the Staff reserved approval of all amounts capitalized from use of an AFUDC rate in excess of 6.5% pending a rulemaking on the subject.

Q HAS THIS ISSUE BEEN RAISED BY THE WHOLESALE INTERVENORS IN OTHER PROCEEDINGS INVOLVING CP&L?

A Yes, Dr. J. Leslie Livingstone filed testimony in Docket Nos. E-8884 and ER76-495 on behalf of both Cooperative and Municipal intervenors setting forth a more appropriate method of calculating AFUDC rates prior to the issuance of Order No. 561. Subsequent to the issuance of Order No. 561, this issue was severed from both the Dockets and was consolidated for purposes of a separate hearing on this single issue. Dr. Livingstone will be working out of the country during the summer, thus, I will be filing testimony on this issue on behalf of the Cooperative intervenors and Mr. Keith Wilkins is providing testimony on behalf of the Municipal intervenors.

Q WHAT IS THE CURRENT STATUS OF THAT CONSOLIDATED PROCEEDING?

A Judge Lewnes rendered his initial decision on January 9, 1978. This decision and the exceptions of the parties are now before the Commission. In his decision Judge Lewnes concluded "...had Order No. 561 been in effect during the historic period involved, the cost for service rendered to CP&L's customers would be greater than now prevails. Wherefore, it is held that the amounts of capitalized AFUDC claimed by CP&L in Docket No. ER76-495 are deemed to be reasonable and as a consequence no adjustments are warranted." It is my contention that Judge Lewnes erred in his determination primarily because the criteria he used in making this determination was inappropriate and secondarily because of a lack of understanding of the complexity and subtle nuances of the detailed issues involved.

Q WHAT CRITERIA SHOULD BE USED FOR EVALUATING THE PAST CAPITALIZATION OF AFUDC?

A In answering this question I must first reiterate the fact that this issue originated from a dispute over the appropriate method of calculating the rate at which AFUDC would be capatilized during a period prior to the issuance of Order No. 561 and when the Commission's Uniform

System of Accounts read in pertinent part defining AFUDC as follows:

> "... includes the net cost for the period of construction of borrowed funds used for such purposes and a reasonable rate on other funds when so used."

Thus, the lack of any specific guidelines for the calculation of the "net cost" of construction funds led to disputes over the appropriate method of calculating this cost. The calculation of this cost was, however, the only aspect of the calculation of AFUDC to be capitalized which was in doubt. The policy of the Commission was clearly that the rates obtained were not to be applied in a manner which would result in the compounding of AFUDC. Since the Commission has issued specific guidelines in the form of Order No. 561 for the computation of the AFUDC rate, it seems appropriate to utilize these guidelines in measuring the appropriateness of the rates used by CP&L prior to issuance. In closing, I would like to emphasize that it was the determination of this rate not the application of the rate which was subject to ambiguities in the Commission's prior policies.

Q HOW DID THE COMPANY CALCULATE THE RATE AT WHICH AFUDC WOULD BE CAPITALIZED PRIOR TO ORDER NO. 561?

A There was no actual calculation but rather a judgment as to the approximate cost of the funds used for construction purposes. The rate was 7% in 1969 and then remained at a level 8% from 1970 through 1976. This method of adducing the cost of construction funds is clearly unreasonable as a basis for establishing rates.

Q PLEASE SUMMARIZE THE RESULTS OF YOUR APPLICATION OF THE CRITERIA DESCRIBED PREVIOUSLY FOR THE YEARS 1969 THROUGH 1977.

A The calculations shown in Cooperative Intervenor Exhibit No. _____ (JBS-6) show that the Company over-capitalized AFUDC in the amount of $38,530,000. The rate base and cost of service adjustments required to correct the effect of this over-capitalization in CP&L's Period II cost of service are shown on Cooperative Intervenor Exhibit No. ___ (JBS-6), page 8.

Q PLEASE DESCRIBE THE PROCESS YOU USED IN COMPUTING THE COMPANY'S OVER-CAPITALIZATION.

A To establish the appropriate capitalization rates, I used the net rate as calculated by the Company's witness Paul S. Bradshaw in Docket Nos. E-8884 (Phase I) and ER76-495, Exhibit No. 153 (PSB-101), page 2, line 25 which were calculated in accordance with Order No. 561, for the years 1969 through 1974. Since Mr. Bradshaw used the incorrect cost of common equity in his computation for 1975 and 1976 rates, I recalculated those using the appropriate common equity rate. I also calculated the appropriate rate for 1977 based upon data supplied by

CP&L in response to data requests and data in the CP&L Form 1 for 1977. I then compared these capitalization rates with those actually applied by the Company during each of those years. I then used the percentage by which the Company's rates were in excess to determine the excessive AFUDC recorded assuming that the AFUDC first capitalized during construction was first to be transferred to plant in service.

Q PLEASE EXPLAIN WHY YOU USE MR. BRADSHAW'S NET RATES INSTEAD OF GROSS RATES FOR THE YEARS 1969 THROUGH 1974.

A In addressing the question of whether a net or gross rate should be used, the Commission in Order No. 561 quoted from Order No. 530-A in pertinent part as follows:

> "... If a net of tax allowance for funds rate is prescribed by a regulatory body in setting the rate levels of utilities, we consider that such treatment is consistent with the intent of Order No. 530 and it is not necessary for utilities to set aside deferred income taxes related to the interest component of the allowance for funds rate. In light of this, we do not believe that it is necessary to make provision in the Uniform System of Accounts to cover this matter."

In other words, it is not necessary for a company to provide a deferred tax account and "normalize" the taxes related to interest during construction. They may simply use a net of tax rate and allocate the interest expense related to construction to non utility operations or "other income and deductions" for purposes of calculating income taxes. This is exactly what was done by CP&L in Docket Nos. E-8884 and ER76-495 in prior years. This was illustrated by intervenor witness Livingstone on page 3 of his direct testimony in Docket No. E-8884 and confirmed by Company witness Utley on page 6 of his rebuttal testimony in the same Docket. Dr. Livingstone's explanation reads as follows:

> "I refer to Exhibit ___ SB-4, Statement B, page 1, which is Carolina's projected statement of income for Period II — 1974. In this statement under "other income and deductions" there appears the item "income taxes -- credit" for $12,818,000. The amount of this item also has been added in with "income taxes" under the heading of operating expenses.....This item arises from Carolina's tax worksheet for Period II at page 71 of the operating expenses section, where Carolina has assigned interest expense of $26,705,000 to other (i.e., non-utility) expense for income tax calculation purposes. The amount of $12,818,000 is 48% of the assigned interest expense of $26,705,000."

In discussing the two general methods used for capitalizing AFUDC and the treatment of interest during construction for income tax purposes

on page 6 of his rebuttal testimony in Docket No. E-884, Mr. Utley says:

> "One method of capitalizing AFC is to use a capitalization rate without any tax effect on the debt portion (this is referred to as a gross rate) and simultaneously permitting the tax effect of the interest attributable to CWIP to be used to reduce income taxes "above the line." This procedure, which is used by many utilities, passes the tax benefit through to consumers immediately.
>
> An alternative form of interest capitalization is to use a net after-tax rate for capitalization purposes and associate the interest deduction as a component of other income. This procedure has great merit because it isolates the income statement from the effect of CWIP. I am attaching an exhibit (Exhibit __ (JFU-1)) which demonstrates by hypothetical illustration the effect of the use of this procedure.
>
> Either one or other of these procedures may be used. The latter procedure is preferrable, as evidenced by the results shown by my exhibit."

Obviously the latter method discussed by Mr. Utley was used by CP&L to remove the interest associated with construction completely from the calculation of income taxes used for ratemaking purposes in the Company's cost of service study, thus necessitating the use of a net after-tax rate.

The Company, in its brief, further explained its treatment of AFUDC and the tax benefits associated with interest during construction on page 33 of its initial brief in that same Docket (E-8884):

> "CP&L properly allocates benefits arising from allowance for funds used during construction (AFUDC) between current and future rate payers and shareholders. The Company accomplishes this allocation first by employing a net after-tax rate for charging AFUDC to construction work in progress (CWIP) and second by assigning to non-operating income the interest expense deduction and resultant tax benefits associated with the borrowed portion of construction funds (T.646)."

Then on page 35 of this same brief, the Company shows that it has been using this same treatment at least since 1970:

> "CP&L has been using the allocation method employed in this case without complaint since 1970. During this time, the Company underwent a five year compliance audit by the Commission Staff; and although there was some preliminary dicussion about the method, the final audit report did not take exception to it (T. 638)."

It is clear from this the Company's treatment of the income tax effect of interest during construction is consistent with the above quotation of Order No. 530 as quoted in Order No. 561 and requires the use of a net of tax rate.

Q WHY DID YOU FIND IT NECESSARY TO RECOMPUTE THE RATE FOR 1975 AND 1976?

A In his computation, Mr. Bradshaw used the wrong rate of return on equity for each of those years. Mr. Bradshaw erred in his interpretation of the return allowed on original cost common equity by the North Carolina Utilities Commission (NCUC). For the 1975 return on original cost common equity Mr. Bradshaw relied upon the order of the state commission issued January 6, 1975. The test period in that proceeding, Docket No. E-2, Sub 229, was the twelve months ending December 31, 1973. However, the state commission, just as does this Commission, stated that it considered the fact "that the records of the Commission clearly reflect that additional financings in the interim and those anticipated in the near term future as well as additional plant coming on line in the near future will have the natural effect of reducing the rate of return on actual equity to somewhere in the range of 12.5%." Thus, even though the return allowed by the Commission produced a 14.6% return on common equity for the test period ending December 31, 1973, the Commission rendered its decision in January, 1975 and found that 12.5% was a fair return on actual common equity and that the rates allowed would produce that result on data updated to more accurately reflect the time the rates would be effective. The Company also made it clear in its FERC Form 1 for 1977 that its own interpretation of the NCUC order was that the Commission actually allowed a 12.5% rate of return on common equity. This is shown on page 428 of the 1977 Form 1. For the year 1976, the Company used the NCUC order in Docket No. E-2, sub 264 issued February 20, 1976 to derive the return on original cost common equity allowed by the state commission. In this order, the Commission provided only its rate of return on fair value common equity thus requiring a computation of the return on original cost common equity which resulted. The Company erred in making this calculation when it derived the 11.83% used. The correct calculation is shown below to be 11.28%:

	Capital (000's)	Cost (000's)	Cost Rate
Long-term Debt	557,406	43,349	7.78%
Preferred Stock	161,624	12,951	8.01
Common Equity	352,173	39,739	11.28
Cost Free	32,789	-0-	-0-
TOTAL	1,103,992	96,039	

I have substituted these common equity returns for those used by Mr. Bradshaw in my calculation of the appropriate AFUDC rates for 1975 and 1976. These calculations are shown on Cooperative Intervenor

Exhibit No. ____ (JBS-6), page 2.

Q HAVE YOU PREPARED AN EXHIBIT SHOWING THE ADJUSTMENTS REQUIRED TO BE MADE TO THE COST OF SERVICE STUDY FOR PERIOD II?

A Yes. this is shown on Cooperative Intervenor Exhibit No. ___ (JBS-6), page 8.

Q HOW SHOULD THE RATE OF RETURN WHICH SHOULD BE ALLOWED ON CP&L'S RATE BASE BE DETERMINED?

A The allowed rate of return on rate base should be equal to the Company's weighted cost of the capital used to finance such rate base. This weighted cost is determined by measuring the cost of each type of capital employed, long-term debt, preferred stock and common equity, multiplying this cost by the relative portion of the total capital made up by the respective type of capital and summing the results.

Q WHAT CAPITAL STRUCTURE AND COST OF LONG-TERM DEBT AND PREFERRED STOCK DID YOU USE?

A As shown on Cooperative Intervenor Exhibit No. ___ (JBS-8), pages 6, 7 and 8, I used the December 31, 1977 actual capital structure and embedded costs of long-term debt and preferred stock as reported in CP&L's 1977 FERC Form 1.

Q WHY DO YOU THINK IT APPROPRIATE TO DENY THE COMPANY'S PROPOSAL TO INCLUDE THE UNAMORTIZED INVESTMENT TAX CREDIT BALANCE IN THE DETERMINATION OF THE COST OF CAPITAL AT THE RATE OF RETURN ON COMMON EQUITY?

A First, all parties in this proceeding agree that these amounts are customer contributed capital which is collected through rates under the auspicies of charges for taxes which are not paid by the Company. As such, these funds have no cost to the Company and logically should be deducted from the rate base or included in the capital structure at zero cost. However, the Congress in revising the Internal Revenue Code in 1971 decided this should not be done in the interests of "sharing" the benefits of this income tax reduction between the investors of the Company and its customers. Thus, it provided that these amounts should not be deducted from rate base nor treated as zero cost capital. Which brings me to my second reason. It is inconceivable to me that this so-called "sharing" provision could ever be interpreted as requiring that the Company not only charge its customers for taxes not paid, but that its stockholders would also be allowed to collect from consumers an equity return on the capital the customers contributed. A third reason logically follows in that this Commission has not been allowing an equity return on this balance, as also is the case in many state jurisdictions, yet the electric utility companies have not been losing this investment tax credit. Thus, not only does the Company's position fly directly in the face of logic, it has not been borne out by past experience.

Q WHAT IS THE EFFECT OF NOT DEDUCTING THESE AMOUNTS FROM RATE BASE NOR INCLUDING THEM IN THE CAPITAL STRUCTURE AS ZERO COST FUNDS?

A The effect is to allow the Company to earn its overall cost of capital on this amount. This overall cost of capital or rate of return is, of course, made up of the cost of long-term debt, preferred stock and a return on common equity and, in my opinion, certainly sufficient to meet the requirements of the IRS.

Q SINCE THE COST OF COMMON EQUITY CAPITAL IS NOT SUBJECT TO PRECISE MATHEMATICAL MEASUREMENT, WHAT CRITERIA DID YOU USE IN DETERMINING THE FAIR COST OF COMMON EQUITY CAPITAL AND WHAT APPROACH DID YOU USE TO DERIVE THIS COST?

A I used the criteria set forth in Bluefield Water Works and Improvement Company versus Public Service Commission, 262 U.S. 679 (1923) and Federal Power Commission versus Hope Natural Gas Company, 320 U.S. 591 (1944). In these landmark decisions the Supreme Court established as standards for measuring the cost of capital that the return to the equity owner should be commensurate with the returns on investments in other enterprises having corresponding risks and, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise so as to maintain its credit and to attract capital.

In determining a fair rate of return on common equity which would meet these two criteria, I have utilized an approach consistently employed by this Commission. I have reviewed the presentations of Company witness Langum and Staff witness Hutt, I have made an independent review of the earnings record of the major electric utility companies in the country, I have reviewed the past financial performance of CP&L and its current financial condition, I have reviewed the decision of the Administrative Law Judge in the preceding Carolina Power & Light Company rate case issued in September, 1977, I have reviewed the rates of return allowed on common equity by this Commission in other recent cases, and I have evaluated the commonly used financial ratios produced under my recommended rate of return to be sure CP&L would be able to maintain its financial integrity, to maintain its credit and to attract capital.

Q PLEASE DISCUSS YOUR REVIEW OF COMPANY WITNESS LANGUM'S PRESENTATION.

A In his "commensurate return or comparable earnings" study, Dr. Langum introduced studies of the rate of return on common equity allowed by state regulatory commissions, the earnings experience on common equity of High Grade industrial companies and the earned rate of return on equity and equity ratios of 39 electric companies during the period 1963-1976. He first concluded that since the average rate of return on common equity derived from operating income allowed utilities by state regulatory commissions in original cost jurisdictions during 1975, 1976, and part of 1977 was 13.5%, CP&L should be allowed a 13.5% rate

of return on common equity by the Federal Energy Regulatory Commission. Even though Dr. Langum was careful to use only those rate orders by state commissions in original cost jurisdictions, it is obvious that this Commission should not rely upon such an analysis since there are many differences in ratemaking philosophy between the FERC and many state commissions such as the use of a projected test year as opposed to an historic test year, and since the Commission has stated on previous occasions that to allow state commission decisions to dictate ratemaking on the federal level would be to relinquish the responsibility and authority conferred upon it by the Congress.

On pages 16 through 19 of his Exhibit, Dr. Langum presents the rate of return on common equity and common equity ratio of operating electric utilities in original cost jurisdictions without flow-through, including companies with publicly-held common stock and subsidiaries of holding companies. A summary of the results for these 39 companies and for CP&L is shown on Dr. Langum's Exhibit, pages 8 and 19 for the periods 1968 through 1976 and 1963 through 1976, respectively. The following average returns on equity and equity ratios were derived from those pages:

CP&L	1963-1976	1968-1976	1976
Return on Equity	-	11.05%	11.91%
Equity Ratio	-	32.16%	34.38%
39 Companies			
Return on Equity	12.46%	12.10%	11.69%
Equity Ratio	36.31%	34.71%	33.93%

These figures show that CP&L's rate of return on equity and equity ratio has improved relative to the group as of 1976, and that using the experience of the 39 companies yields a zone of reasonableness for rate of return on equity of between 11.69% and 12.46%. Ignoring the actual rates of return earned by these 39 companies during this 14-year period as a determinant of the fair rate of return on common equity for CP&L, Dr. Langum used these data in connection with data on the rate of return on common equity and the common equity ratio of industrial companies with a quality ranking of High Grade by Moody's on pages 22 through 27 of his Exhibit to determine whether or not his recommended rate of return on common equity is "in line" with the historical relationships of corporate profitability in the unregulated part of the American economy. Not only has Dr. Langum chosen for comparison unregulated companies not operating in monopolistic situations and thus with attendant higher risks (as shown by the fact that for the 1973 through 1976 period the average rate of return on common equity of the 41 industrial companies excluding oil companies was 17.50% and the average common equity ratio was 82.8%), he chose companies with the highest possible common stock rating awarded by Moody's. Even

assuming, for the sake of argument, using Dr. Langum's "relativity approach" of comparing the component for common equity of electric utilities to the component for common equity of unregulated industries is an acceptable approach to the determination of the fair rate of return on the common equity of CP&L, the unreasoned selectivity he employed in applying this approach renders a rate of return recommendation which is extremely unjust and unreasonable as I will show. Dr. Langum has summarized the results of his application of this approach on page 27 of his Exhibit. The logic used is that the component for common equity recommended by Dr. Langum (shown in the last two columns on the third line of numbers on page 27) divided by the appropriate component for common equity of the 41 industrial companies should produce a reasonable percentage as compared to those percentages shown on the bottom line of that exhibit. At first blush, the results seem to do exactly that; however, it doesn't require a great deal of inspection to discover a serious flaw in Dr. Langum's application of this methodology as shown on that page. Instead of using the average of the entire period shown or a reasonable average of some subset of this data such as the average of the highest and lowest years, Dr. Langum chose as his comparison industrial component for common equity that produced in 1976 by the highest rate of return on common equity earned by the industrial companies in the entire 1963 through 1976 period. It was this type of self-serving selectivity which was cited by the Administrative Law Judge in his decision in Docket No. ER76-495 in rejecting CP&L's presentation in support of its requested return on equity.

I have prepared Cooperative Intervenor Exhibit No. ___ (JBS-8), page 1, to show the resulting rate of return on equity produced when the comparison component for common equity of the 41 industrials used is the average of the entire 1963 through 1976 period and when the average of the two years producing the highest and lowest ratio of component for common equity for the electric utilities to the component for common equity of the industrials is used. The result is a high of 12.56% and a low of 10.39% or an average of 11.47% rate of return on common equity.

Dr. Langum also used as justification for his recommendation of 13.5% the fact that, in his judgment, this would produce a level of earnings sufficient to bring Moody's ratings of CP&L's bonds to A and maintain them at that level. In fact, subsequent to the filing of Dr. Langum's testimony in this proceeding and subsequent to the issuance of the Administrative Law Judge's decision in the predecessor case, Docket No. ER76-495 (finding a rate of return of 12.00% to be a fair rate of return on equity for CP&L), Moody's upgraded its rating of CP&L's first mortgage bonds from Baa to A. Moody's had downgraded CP&L bonds to Baa in 1975. Since that time, however, CP&L's financial condition has improved each year. This can be seen from the times charges earned and earnings per common share reported in Moody's Public Utility Manual and Moody's Public Utility News Reports for 1975, 1976 and 1977:

	1977	1976	1975
Times Charges Earned			
Before Income Tax	3.36	3.17	2.50
After Income Tax	2.31	2.24	2.06
Earnings Per Common Share	$2.61	$2.52	$2.47

As pointed out by Dr. Langum, Standard & Poor's has maintained CP&L's bond rating at A throughout this period.

Additionally, by reducing his recommended rate of return on common equity of 13.75% in Docket No. ER 76-495 to 13.5% in the instant Docket, Dr. Langum has shown that he feels CP&L should be awarded a lower rate of return in this case than in the preceeding case.

Q FROM THIS ANALYSIS, WHAT DO YOU CONCLUDE THE ZONE OF REASONABLENESS FOR CP&L'S ALLOWED RATE OF RETURN ON EQUITY SHOULD BE?

A It is my conclusion from the foregoing that the appropriate zone of reasonableness for CP&L's allowed rate of return on equity should be between 10.4% and 12.6%.

Q HOW DOES THIS ZONE OF REASONABLENESS COMPARE WITH THAT ESTABLISHED BY THE ADMINISTRATIVE LAW JUDGE IN HIS INITIAL DECISION IN DOCKET NO. ER76-495?

A It compares very favorably since the Judge in that Docket found the zone of reasonableness to be from 11.0% to 12.5%.

Q WOULD YOU NOW PLEASE SHARE THE RESULTS OF YOUR REVIEW OF STAFF WITNESS HUTT'S TESTIMONY?

A Yes, Witness Hutt also used as his primary measurement tool a "comparative study" of Carolina Power & Light and seven "comparable" electric utilities supplemented by a number of other considerations such as the recent performance of CP&L, its construction plans, and the effect of environmental standards. Mr. Hutt used the six-year period 1972 through 1977 for his study of CP&L and his seven selected companies. His Exhibit on page 27 shows that the average earned rate of return on common equity for these seven utilities ranged from a low of 10.66% in 1974 to a high of 12.36% in 1977. After reviewing this and the other data for these companies, he concluded that a fair rate of return on common equity for Carolina Power & Light should be 12.8%, which is outside the range established by the seven companies, because it is his opinion that CP&L is a riskier company than the seven as a group.

There are several basic problems with this analysis, not the least of which is the fact that the Bluefield and Hope decisions call for a rate of return commensurate with the returns on investments in other enterprises having corresponding risks. Mr. Hutt's group of seven utilities failed

to meet this test of comparability by definition since he finds CP&L to be riskier than the group and finds it necessary to allow a rate of return to CP&L outside the range of returns earned by his comparison group during his study period. Additionally, even though his four selection criteria were objective, his study contains too few companies and too few years to yield meaningful results. The number of years is especially short for purposes of indexing such as Mr. Hutt has done to compare the results of the group of companies with that of CP&L. If the year chosen as the base for the index is abnormal, the short five-year period which follows does not allow time for this distortion to be ridden out. Also, some of the factors listed by Mr. Hutt as representing increased risk to CP&L relative to the seven "comparable" utilities appear to be either incorrect or inconsistent with other statements in his testimony, data contained on other pages of his exhibit and/or comparable data shown on CP&L witness Langum's exhibit. For instance, Mr. Hutt's first factor is "slower rate of growth in total kWh sales (page 22)." Page 22 actually shows that CP&L's total kWh sales have grown more rapidly than those of the comparison group. The rate of growth over the period shown is 20% for the group and 24% for CP&L. The annual compound rate of growth over that period is 3.67% for the group and 4.33% for CP&L. The index shown for 1977 is 119.77 for the group and 123.6 for CP&L.

Another factor listed is, "return on average common equity has been declining since 1975 while that of the seven comparable utilities has been rising since 1974 (page 27)." While page 27 does in fact show CP&L's return on average common equity declining from 1975 to 1976 and then again from 1976 to 1977, this contradicts the results shown on page 8 of the same exhibit where the return on common equity is shown to increase from 1975 to 1976 and remain relatively stable from 1976 to 1977. This latter performance is confirmed by witness Langum's exhibit, page 8 where he also shows the rate of return on common equity increasing from 1975 to 1976. Another such contradiction is attendant to the factor listed as "earnings per share have been erratic and generally declining since 1972 while the seven comparable companies have had a steady rise since 1974 (page 29)." The CP&L earnings per share reported by Moody's Public Utility Manual and News Reports as well as the Company's prospectus dated October 4, 1977 show a steady rise in earnings per share since 1974. In fact, page 29 shows that the earnings per share of both the group and CP&L declined from 1972 to 1974 and then both increased 18% from 1974 to 1977. The footnote at the bottom of that same page also indicates that CP&L restated its earnings per share for 1975 and 1976 to reflect a settlement agreement with its wholesale customers and the effect of the Administrative Law Judge's decision in Docket No. ER76-495 which then illustrates the same steady increase in earnings per share for CP&L during the period 1974 through 1977. Finally, in my opinion, an isolated review of Mr. Hutt's factor number 7, "average number of shares outstanding are up substantially since 1972 relative to the growth experienced by the seven comparable companies (page 30)" could lead to an erroneous conclusion. In fact, it is possible that this factor could be contributory

to lowering the risk of CP&L relative to the seven companies rather than increasing it. The increase in average number of shares of common stock outstanding in and of itself does not necessarily provide an indication of the risk of a utility either standing alone or relative to other utilities. Additionally, this Commission has often noted the fact that the risk of a company is generally decreased as its equity ratio is increased, and that is shown to be the result of this increase in average number of shares outstanding of CP&L by Mr. Hutt himself when on the same page he says, "Carolina Power has had a thicker equity in both 1976 and 1977 than the seven comparable electric utilities."

Q IF THE DATA USED IN MR. HUTT'S COMPARATIVE STUDY WERE RELIED UPON IN MAKING A DETERMINATION OF THE APPROPRIATE RATE OF RETURN ON COMMON EQUITY FOR CP&L, WOULD YOU CONCLUDE THAT CP&L'S RISK WAS AT LEAST COMPARABLE ENOUGH TO THAT OF THE GROUP OF SEVEN UTILITIES TO WARRANT ASSIGNING IT A RATE OF RETURN WITHIN THE RANGE OF 10.66% TO 12.36% FOUND TO BE EARNED BY THE GROUP DURING THE PERIOD 1972 THROUGH 1977?

A Yes, pages 24 and 29 of Mr. Hutt's Exhibit show that CP&L's after-tax total charges coverage and earnings per share have been increasing just as have those of the group. Also, in 1977 the after-tax total charges coverage and earnings per share for the group and for CP&L are very close together. In fact, these statistics for CP&L are closer to the average for the group in 1977 than any of the seven companies within the group with the one exception of the after-tax total charges coverage of Pennsylvania Power and Light which is 0.01 closer to the average than is that of CP&L. Another major factor is that the equity ratio of CP&L is over two percentage points higher than the average of the group and, as shown on page 8 of Exhibit No. ___ (WEH-1), Value Line projects CP&L's equity ratio to increase to almost 40% in 1978.

Additional factors to consider are that coal and nuclear facilities comprise 95% of CP&L's generating capacity compared with the national average of 56% (in 1976) as shown in the Electric Utilities Basic Analysis of Standard & Poor's Industry Surveys dated February 23, 1978 (section 2) and that 28% of its revenue comes from industrial sales which is the same as the national average shown for 1976 in the same publication.

Q PLEASE DISCUSS YOUR REVIEW OF THE INITIAL DECISION OF THE ADMINISTRATIVE LAW JUDGE ISSUED SEPTEMBER 7, 1977 IN CAROLINA POWER & LIGHT COMPANY, DOCKET NO. ER76-495 (PHASE II) AND THE APPLICABILITY OF HIS FINDINGS TO THIS PROCEEDING.

A In his decision, the Administrative Law Judge devoted 11 pages to a thorough analysis of the record evidence on the subject of determining a fair rate of return on equity. He concluded that the credible evidence of record established a range within the zone of reasonableness of 11.0% to 12.5% as a fair rate of return on common equity for CP&L and that a 12.0% rate of return should be adopted as being at the upper band of reasonableness.

As previously noted, CP&L's financial condition has been steadily improving since 1975 as indicated by the major financial indicators of coverage ratios, earnings per share and equity ratio. Given CP&L's improved financial condition, the zone of reasonableness established by the review of data filed by Dr. Langum of 10.4% to 12.6%, the zone of reasonableness established by the review of Witness Hutt's comparative study of 10.7 to 12.4 and the zone established by the Administrative Law Judge recently of 11.0% to 12.5% it is my conclusion that the 12.0% allowed by the Administrative Law Judge in Docket No. ER76-495 should be used as the fair rate of return on common equity of CP&L in the instant docket.

Q WHAT ADDITIONAL ANALYSES DID YOU MAKE IN ORDER TO CONFIRM THAT 12.0% WAS A FAIR RATE OF RETURN ON COMMON EQUITY FOR CP&L?

A As a check on the reasonableness of my rate of return on common equity recommendation of 12.0%, I have conducted two additional analyses. First, I have made a review of the rates of return on common equity allowed by this Commission and its predecessor, FPC, in recent opinions. I have also analyzed the results of several Discounted Cash Flow (DCF) calculations under various conditions.

Q PLEASE DISCUSS THE RESULTS OF YOUR ANALYSIS OF RECENT COMMISSION RETURN ON EQUITY CAPITAL ALLOWANCES.

A The rates of return on common equity allowed in these ten recent electric utility cases are shown on Cooperative Intervenor Exhibit No. ___ (JBS-8), page 5. The allowed rates of return range from 12.0% to 13.5% on equity ratios of 37.48% and 29.08%. The average of the returns on equity allowed is 12.83% and the average of the equity ratios is 35.07%. Of course, a review of returns allowed by the Commission over such a short period of time, with so few companies in various states of financial condition involves circularity and suffers seriously as the sole method for determination of the fair rate of return on common equity for a particular company. However, it is useful in assuring that the zone of reasonableness established by the evidence of record falls generally within the range of equity returns actually allowed by the Commission in recent Opinions. The zone of reasonableness determined earlier in my testimony overlaps only the lower end of the range of returns recently allowed by this Commission; however, that zone is compatible with this range since it is based upon the evidence in the instant docket upon which the Administrative Law Judge and the Commission will rely in making its decision in this docket.

Q WHY ARE YOU USING A DISCOUNTED CASH FLOW ANALYSIS AS A CHECK ON THE REASONABLENESS OF YOUR RECOMMENDED RATE OF RETURN ON EQUITY?

A The DCF methodology allows the development of a reasonable assessment of the expectations of the market place in terms of the return on common equity stock. I say expectation not simply because a computation can

be made based upon projected data as well as historical data, but because projections of expected earnings and dividends can only be rationally made on the basis of past experience. Thus, if properly employed, the investor's expected rate of return can be determined.

The Discounted Cash Flow method assumes that the investor's capitalization rate or required rate of return on common equity is equal to the current yield of the security plus the expected price appreciation. It is generally assumed that this price appreciation results from a growing stream of future returns and thus the formula is expressed as follows:

$$r = \frac{D}{P} + g$$

The D divided by P is the current dividend yield and the g may be the expected growth rate of dividends or earnings.

The DCF method is very appealing in theory, however, its major strength also becomes its major weakness when applied in a regulatory setting in that the determination of the expected growth in dividends and/or earnings per share must be based on individual judgment and thus subject to considerable controversy. Obviously, a wide range of common equity returns could be justified by picking the appropriate estimated growth factor.

In addition, it could be reasoned that, since the formula shown above is based upon a long run outlook in that it assumes a constant growth rate (g) to infinity, investors may expect the future yield (D/P) to be something other than that currently experienced. This is logical in light of the fact that the price of a given common stock is subject to substantial volitility in the short run depending on a number of factors varying from the fundamental financial condition of the company to the psychological mood of the marketplace. Thus, judgment must be exercised not only in chosing the appropriate growth rate (g), based upon a decision as to whether dividend growth or earnings growth is more appropriate, but also in chosing the dividend yield to be employed.

Still, the DCF method can be used as a valuable check on the common equity return developed in other ways as the Commission has recently indicated.

Q HOW HAVE YOU EMPLOYED THE DCF METHOD AS A CHECK IN YOUR ANALYSIS?

A Considering the factors discussed above, I have relied upon four calculations using this method -- three based upon expected growth in dividends since dividends provide the most stable stream of returns and another using the dividend yield and average annual increase in earnings per share over nine five-year periods as reported in Public Utilities Fortnightly. The results of these calculations are shown on Cooperative Intervenor Exhibit No. ____ (JBS-8), pages 2, 3 and 4. These calculations produce a relatively wide range of possible returns, but the average confirms that my recommended 12.0% is a generous rate of return on common equity.

For the first calculation I have used the current annual dividend and current stock price as reported in the Wall Street Journal for June 2, 1978. Based upon the current annual dividend of $1.84 per share and the June 2, 1978 market price of $22.50 per share the current yield is 8.18%. To determine the appropriate expected rate of growth in dividends I have used the dividends declared per share reported by Value Line as shown on Staff Witness Hutt's Exhibit, page 8 for the years 1963 through 1977. As shown on Cooperative Intervenor Exhibit No. ___ (JBS-8), page 2, I have calculated the annual compound rate of growth in dividends for fourteen different periods beginning with the one-year period 1976 through 1977 and one-year increments ending with the fourteen-year period 1963 through 1977. The high and low growth rates for these periods are 4.70 and 2.56, respectively and the average of these growth rates is 3.26. Adding this 3.26% growth rate with the 8.18% dividend yield produces an expected rate of return of 11.44%.

For my next calculation I determined the average dividend yield for the period 1963 through 1977 to be 5.77%. I then added the previously determined average annual dividend growth rate of 3.26% and obtained a required rate of return on equity of 9.03%.

The third calculation, using the growth in dividends, is based upon the Value Line projections (shown on Staff witness Hutt's Exhibit, page 8) of the average annual dividend yield in the 1980-82 period and the average annual increase in dividends during the period 1975-77 to 1980-82. These figures are 5.6% and 8.5%, respectively, and their sum is 14.10%.

Averaging the lowest result and the highest result from the three calculations I obtain 11.57% as a reasonable rate of return on equity expectation by the market place.

The fourth calculation, shown on Cooperative Intervenor Exhibit No. ___ (JBS-8), page 4, utilizes the dividend yield and average annual increase in earnings reported by Public Utilities Fortnightly for nine five-year periods for 110 electric utilities. The indicated required rates of return on common equity resulting from the addition of the two figures for each time period ranged from a low of 9.2% to a high of 12.5% with an average of 10.94%. The average was composed of a 7.16% dividend yield and a 3.78% annual increase in earnings per share. The results of this calculation for the 110 companies are comparable to those obtained in the three DCF calculations above for CP&L, and they all support my earlier conclusion that my recommended rate of return on common equity is well within the zone of reasonableness. In fact, these calculations show my recommendations to be well in the upper portion of the zone.

Q ARE THERE ANY OTHER REASONS WHY CP&L SHOULD NOT BE ALLOWED A RATE OF RETURN ON COMMON EQUITY IN EXCESS OF 12.0%?

A Yes, CP&L is experiencing tremendous annual, cost-free capital contributions by its rate payers currently for huge amounts of taxes which it will not pay until many years later or not at all. This has been cited by the Commission as a reason for granting a return on common equity lower than might otherwise be appropriate.

Also, as shown by Staff witness Hutt and as I stated above, CP&L is in a very favorable fuel situation with approximately 95% of its energy generated with coal and nuclear fuel.

Q DOES YOUR RECOMMENDED RATE OF RETURN PROVIDE INTEREST COVERAGE RATIOS WHICH ARE ADEQUATE FOR THE COMPANY TO MAINTAIN ITS FINANCIAL INTEGRITY AND ATTRACT CAPITAL?

A Yes, as shown below my recommended rate of return should assure the Company's ability to maintain its financial integrity and attract capital.

In Standard and Poor's The Fixed Income Investor, January 3, 1976, pages 987 and 988, in discussing bond ratings, Standard and Poor's says that the primary earnings tests remain those centering on fixed charge coverage and that the most important of the coverage tests for rating purposes are the pre-tax and pre-tax excluding AFDC coverage tests. The minimum coverages given for AA and A ratings were 3.0 and 2.5, respectively. The pre-tax coverage calculation can be expressed as follows:

$$\text{Times Covered} = \frac{\text{Earnings Before Income Taxes}}{\text{Interest Requirements}}$$

Or

$$\text{Times Covered} = \frac{\text{Interest} + \dfrac{\text{Preferred Dividends}}{(1 - \text{Tax Rate})} + \dfrac{\text{Common Return}}{(1 - \text{Tax Rate})}}{\text{Interest Requirements}}$$

This calculation, using my recommended return, yields a coverage ratio of 3.83 as follows:

$$\frac{(50.32\%)(7.77\%) + \dfrac{(14.07\%)(8.01\%)}{(1 - .5112)} + \dfrac{(35.61\%)(12.00\%)}{(1 - .5112)}}{(50.32\%)(7.77\%)}$$

$$\frac{14.96}{3.91} = \underline{3.83}$$

This is the coverage ratio CP&L would achieve if its capital structure were equal to its rate base. However, the capital structure I used in my rate of return determination is not the same as the rate base used in my cost of service study. The primary reason for this is because construction work in progress (except for pollution control facilities) and nuclear fuel in process is not included in the rate

base so I will make two additional computations below showing the effect on coverage of this difference with and without AFUDC.

Coverage With AFUDC:

$$\frac{\text{(Before Tax Cost of Capital)(Rate Base) + (Before Tax AFUDC Rate)(CWIP)}}{\text{(Debt Component)(Capital Structure)}}$$

$$\frac{(14.96)(1,772,562,808) + (8.87)*(703,343,916)**}{(3.91)(2,387,754,757)} = \underline{3.51}$$

*From Cooperative Intervenor Exhibit No. ____ (JBS-6), page 2.
**Average CWIP + NFIP from 1977 Form 1 less CWIP included in rate base.

Coverage Without AFUDC:

$$\frac{\text{(Before Tax Cost of Capital)(Rate Base)}}{\text{(Debt Component)(Capital Structure)}}$$

$$\frac{(14.96)(1,772,562,808)}{(3.91)(2,387,754,757)} = \underline{2.84}$$

Thus, comparing these coverages with the minimums listed above for AA and A coverage, one can see that my recommended return should allow CP&L to comfortably maintain its A ratings. This should be especially true given CP&L's favorable fuel situation, customer breakdown and cash flow from customer contributed capital in the form of deferred taxes, investment tax credits and income taxes allocated to other income.

Q DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A Yes, it does.