



Carolina Power & Light Company

P. O. Box 1551 • Raleigh, N. C. 27602

WILLIAM E. GRAHAM, JR.
Senior Vice President
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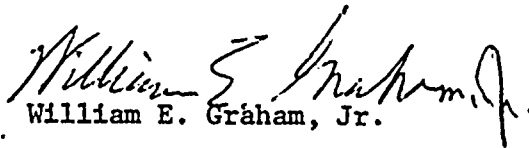
North Carolina Utilities Commission
P. O. Box 991
Raleigh, North Carolina 27602

Re: Docket No. E-2, Sub 297

Dear Members of the Commission:

I am delivering herewith for filing the original and necessary copies of direct testimony for Mr. Larry E. Smith and additional testimony for Mr. Paul S. Bradshaw and Mr. James M. Davis, Jr. This testimony supplements the previously filed testimony with respect to the Company's experience since the end of the June 30, 1976 test year.

Yours very truly,


William E. Graham, Jr.

WEG:mc

Enclosures

DIRECT TESTIMONY
OF
LARRY E. SMITH
FOR
CAROLINA POWER & LIGHT COMPANY

1 Q. Please state your name and business address.

2 A. Larry E. Smith, 336 Fayetteville Street; Raleigh, North Carolina.

3 Q. What is your occupation?

4 A. I am Manager - Fuel for Carolina Power & Light Company.

5 Q. Would you please state your educational background and experience?

6 A. I received my B. S. Degree in nuclear engineering from North Carolina
7 State University and completed post-graduate studies in nuclear
8 engineering at the University of South Carolina and at Catholic
9 University in Washington, D. C. I am a registered professional nuclear
10 engineer in the State of California.

11 For four years I was employed by the Carolinas-Virginia Nuclear
12 Power Associates as a nuclear engineer. While with the Associates, I
13 worked on nuclear reactors at North Carolina State University in Raleigh,
14 North Carolina, and at the National Reactor Testing Station in Idaho
15 and at the Carolinas-Virginia Tube Reactor at Parr, South Carolina. In
16 1964, I joined the National Bureau of Standards as Deputy Chief Nuclear
17 Engineer. In 1965 I was promoted to Chief Nuclear Engineer for the
18 Bureau of Standards' research reactor facility.

19 I have held various operators' and senior operators' licenses
20 for operating nuclear reactors.

21 I joined CP&L in February 1968 as Reactor Licensing & Nuclear
22 Fuel Management Engineer responsible for the licensing of our nuclear

1 facilities and the contracting for our nuclear fuel supplies. I was
2 later appointed Director of Technical Services and served in this
3 position for about one and one-half years. In this capacity, I continued
4 my responsibilities of licensing and nuclear fuel management. Since
5 March of 1971, I have been Manager - Fuel. In this position, I am
6 responsible for the management of fossil as well as nuclear fuel.
7 My duties include the supervision of the fuel department in the procurement
8 of all fuel for CP&L's plants, including coal, oil, natural gas and
9 nuclear.

10 Q. Mr. Smith, please explain how nuclear fuel is utilized.

11 A. Nuclear fuel is developed from slightly enriched uranium and fabricated
12 into assemblies. The assemblies are placed in the reactor and have
13 a useful life of three to four years. As energy is extracted from
14 each assembly during the operation of the reactor, the energy producing
15 atoms required to produce the nuclear reaction are expended until
16 the assembly can no longer efficiently sustain the nuclear reaction.
17 The assembly is then removed and replaced with a fresh assembly.
18 The assembly that is removed from the reactor still contains about
19 40 percent of the energy equivalent of the atoms which were present
20 when it was first placed into the reactor. These atoms, if separated
21 out from the waste and reconditioned, may be recycled as material
22 for subsequent fabrication into nuclear fuel assemblies. There are
23 two types of fuel which are obtained from this recycling, uranium
24 and plutonium. Uranium is an acceptable and approved fuel. The use
25 of plutonium in commercial facilities has not yet been approved by
26 the Nuclear Regulatory Commission.

1 Q. Please describe the various identifiable costs relating to nuclear
2 fuel assemblies.

3 A. There are four major costs in preparing uranium for use in a nuclear
4 reactor. They are generally called the front end costs and are:

- 5 1. The purchase cost of uranium.
- 6 2. Conversion of uranium from a solid to a gaseous state.
- 7 3. Enriching the gaseous uranium in the concentration of
8 energy producing atoms.
- 9 4. Reconversion of the gas to a solid and fabrication
10 into a fuel assembly.

11 In addition to these costs there are carrying charges for the uranium
12 throughout the process, transportation, design and analysis costs. At
13 our current contract price these costs equal approximately 80 percent
14 of the nuclear fuel cost.

15 Q. What other factors are involved in calculating your current nuclear
16 fuel expenses?

17 A. Reprocessing, removal and disposal of waste products and costs of storage.
18 The value of the fuel to be obtained from the reprocessing of the fuel
19 after its recovery is credited against these costs. We refer to this
20 as "salvage value." This credit is determined by subtracting the cost
21 associated with reprocessing from the value of the reprocessed fuel.
22 The reprocessing, removal and disposal costs are approximately 32%
23 of the fuel cost and the value of the reprocessed fuel is equal to
24 a credit of about 12% of the fuel cost.

25 Q. What is the effect on the cost of fuel if reprocessing is not allowed?

1 A. The cost is substantially greater because rather than recovering the
2 remaining fuel and using it in the future, the Company will have to
3 pay the expense of its disposal. Since the uranium and plutonium
4 cannot be recovered and used, there is no value to partially offset
5 the cost of perpetually storing or otherwise disposing of used fuel
6 assemblies. The cost of storing the fuel for 10 years for cooling
7 purposes as proposed by the Nuclear Regulatory Commission, shipping
8 it to a federal waste depository and paying perpetual storage cost,
9 will be about 8¢/MBtu more than the costs of reprocessing and recovery
10 of the unused fuel. The revised cost for fuel currently installed
11 would be 28.48¢/MBtu for the Robinson No. 2 unit, 41.56¢/MBtu for
12 Brunswick No. 1 and 47.32¢/MBtu for Brunswick No. 2.

13 Q. Why has CP&L not been charging these costs as a part of its nuclear
14 fuel cost?

15 A. Because until recently it was the Company's understanding that reprocessing
16 would be timely permitted by regulatory agencies and the courts.
17 We have a contract for reprocessing and have proceeded upon the basis
18 that the contract would be fulfilled and that the use of plutonium
19 would be allowed. So long as the Company had a viable contract and
20 reasonable expectations that reprocessing would be available, it was
21 considered reasonable not to charge the full cost of nuclear fuel
22 to present users. Under our present fuel charges, costs are being
23 calculated upon the basis that reprocessing would be available at
24 least by 1980 and that extracted fuel could then immediately be used

1 as a fuel supply. However, the licensing of reprocessing facilities
2 has not progressed on a timely basis and we now know that we will
3 not be able to have any fuel reprocessed in accordance with our reprocessing
4 contract. In fact, reprocessing and the use of plutonium may never
5 be approved.

6 Q. Would you elaborate on the above statement?

7 A. Yes. The progress of the Generic Hearings on the use of mixed oxide
8 fuels, the political climate and the certainty of lengthy court challenges
9 in the event the use of plutonium or reprocessing is allowed by regulatory
10 agencies, make it extremely imprudent to assume that any uranium, or
11 plutonium will be recovered and reused. In October 1976 President
12 Ford made a major policy statement to the effect that the United States
13 should defer commercialization of chemical reprocessing of nuclear
14 fuel. He ordered the Energy Research and Development Administration
15 to change its policies which up until then assumed that there would
16 be reprocessing. President Carter has expressed similar views. There
17 have been expressions of considerable concern from many members of
18 Congress regarding what they consider to be dangers that plutonium
19 could be diverted by terrorists or criminal elements. Moreover, there
20 is strong opposition by influential consumer and conservation groups
21 to the use of plutonium and nuclear fuel reprocessing.

22 The Gesmo (Generic environmental statement on mixed oxide fuel)
23 hearings being conducted by the Nuclear Regulatory Commission with
24 respect to the environmental fitness of mixed oxide fuels will continue
25 indefinitely and may indeed be resolved unfavorably. Even if a favorable

1 decision is rendered, it will be subject to long judicial review.

2 It is simply no longer reasonable to assume that any reprocessed uranium

3 or plutonium will ever be available. We know with relative certainty

4 that no reprocessed nuclear fuel will be available for use during the

5 present decade nor before the mid-1980's under the most favorable circumstances

6 that could be assumed. The Gesmo proceeding must be completed and must,

7 at the threshold, permit reprocessed plutonium. The appellate review

8 process and any necessary rehearings will have to be completed. Then,

9 the physical side of reprocessing will have to be examined and the

10 reprocessing plant capacity approved and licensed for use. The Allied

11 General Nuclear Services Company, with whom CP&L has a reprocessing

12 contract, is expected to "mothball" its plant because it cannot be

13 operated in the near future. Additionally, there are presently no

14 permanent storage disposal facilities for nuclear waste. The Energy

15 Research and Development Administration now estimates that the earliest

16 that a disposal waste facility could be available would be 1985.

17 Q. What is CP&L's position about continuing to provide a credit for uranium

18 and plutonium in its nuclear fuel charges?

19 A. It is our position that this should no longer be done. If the use

20 of mixed oxide fuel is not allowed, the Company will substantially

21 under-recover its actual nuclear fuel costs under its present method

22 of calculating its nuclear fuel costs. Spent nuclear fuel is simply

23 not an asset at the present time. It is a substantial liability.

24 Should regulatory and legal decisions in the future result in it becoming

25 an asset, the effect would be lower future nuclear fuel prices, as

1 the remaining uranium and plutonium in the spent fuel could be put
2 to use. The consumer would get the benefit of any favorable regulatory
3 and legal action. In the meantime, it is no more prudent to credit
4 remotely possible future values of spent fuel to present nuclear costs
5 than it would be to credit the cost of coal on the theory that a valuable
6 use for the waste ashes which the coal produces may some day be available.

7 Q. How would you propose that CP&L recover the total present cost
8 of nuclear fuel?

9 A. I would recommend that the cost of reprocessing be deleted from
10 the fuel expense, that credits for the value of recovered uranium
11 and plutonium materials no longer be included, and that the cost
12 of permanent disposal of the radioactive materials be included
13 in their place. This will result in the total nuclear fuel
14 costs including disposal of waste products being reflected on a
15 current basis. The net result of these recommended changes
16 would be to increase the average nuclear fuel expense in
17 the test period in this proceeding by 7.97¢ per MBtu. I have
18 provided Mr. Davis with the cost figures necessary to reflect
19 this change in the test year results.

CAROLINA POWER & LIGHT COMPANY

ADDITIONAL TESTIMONY OF PAUL S. BRADSHAW

1 Q. What is the purpose of this additional testimony?

2 A. This testimony presents revised adjustments to the test period in
3 this proceeding of twelve months ended June 30, 1976. These revised
4 adjustments are necessary to restate the test period to include
5 events that have occurred since the time of the original filing. I
6 shall present revised adjustments which reflect the actual cost of
7 the Brunswick No. 1 nuclear generating unit which was placed into
8 commercial service on March 18, 1977. I have also recomputed the
9 depreciation expense, property tax and deferred income taxes related
10 to the updated cost of the Brunswick unit. In addition, I will
11 present revised adjustments to reflect wage increases placed into
12 effect through December 31, 1976, for new employees added after the
13 end of the test period and for promotional increases and organizational
14 changes which occurred after the pre-filing of the original testimony.
15 I shall also present adjustments to reflect the increased cost of
16 additional security requirements at each of our nuclear generating
17 units and changes in the cost of nuclear fuel.

18 Q. Where have you shown the revised adjustments related to the in service
19 date of the Brunswick nuclear generating unit?

20 A. The revised adjustments are shown on my revised Bradshaw Exhibit No. 5.
21 The actual cost transferred to plant in service is the \$323,471,998.
22 The original adjustment contained in my pre-filed testimony related
23 to the estimated cost of the unit at \$331,384,000. As I have previously

1 stated, the additional items have been recalculated based on the
2 actual cost transferred to plant as of the commercial in service
3 date of March 18, 1977.

4 Q. Why have you revised the wage and salary adjustment contained in
5 your pre-filed testimony?

6 A. In the pre-filed testimony, we included an adjustment to reflect
7 wage increases based on the number of employees and the organizational
8 structure that existed at June 30, 1976. Since that time, we have
9 added additional employees and have placed into effect a reorgani-
10 zation during the month of December, 1976. The revised adjustment
11 reflects the Company's actual salary level at the end of 1976, and
12 reflects the addition of new employees and promotional increases
13 and organizational changes which occurred during December, 1976. This
14 revision results in a total wage and salary adjustment of \$9,655,906.
15 The original adjustment included in my previously filed testimony
16 based on the number of employees at June 30, 1976 was \$5,772,647.

17 Q. Why have you included an adjustment to reflect increased cost of
18 security at the nuclear generating plants?

19 A. The regulatory agencies responsible for security guidelines at nuclear
20 generating plants have issued a new rule, NCR Rule 10 CFR 73.55,
21 which requires additional guards, watchmen, and other increased
22 expenses to provide additional security at each of our nuclear
23 generating plants. CP&L will finalize an agreement with a security
24 contractor before the end of March, 1977 to provide 49 additional
25 security personnel, calculated at current prices to cost a minimum

1 of \$543,691 annually. This does not include any of the capital
2 expenditures associated with NRC Rule 10 CFR 73.55, which are
3 estimated at over a million dollars.

4 Q. Mr. Bradshaw, are you familiar with the testimony of Mr. Larry Smith
5 in this proceeding concerning changes in the cost of nuclear fuel?

6 A. Yes, I am. I support the recommendation of Mr. Smith that we revise
7 our nuclear fuel expense to reflect the total cost of the nuclear
8 fuel, including permanent disposal of radioactive materials. This
9 will require that we stop reflecting the cost of reprocessing and
10 credit for recovered products in the cost of nuclear fuel and include
11 in their place the cost of permanent disposal of the removed fuel
12 assemblies.

13 Q. Does the Company have on hand spent nuclear fuel assemblies which
14 have been removed from its nuclear reactors?

15 A. Yes, we have. We have five batches of nuclear fuel assemblies which
16 have been removed from our reactors. We have assigned a value to
17 these batches as a credit to the cost of service and have been
18 holding the material in anticipation of recovery of the fuel products
19 and use as a supply of nuclear fuel material. It is clear from the
20 testimony of Mr. Smith that reprocessing of spent nuclear fuel and
21 recovery of uranium and plutonium will not occur as provided in the
22 present cost of nuclear fuel.

23 Q. What will be the effect on the spent nuclear fuel presently on hand?

24 A. Under the condition of no reprocessing, the spent nuclear fuel would
25 become a liability rather than an asset. The liability would occur

1 on a current basis and would be twofold. First, it would be
2 necessary to write off the previously determined value, and secondly,
3 the cost of the disposal of the nuclear fuel assemblies would be
4 incurred. These would be current costs determined in the accounting
5 period during which the condition changed from reprocessing to one
6 of permanent storage and disposal of the fuel assemblies. These
7 items become a liability in the first quarter of 1977.

8 Q. What would be the effect in the test year of the change in the value
9 of the spent nuclear fuel?

10 A. Two adjustments would be required to reflect the change in the value
11 of the spent nuclear fuel assemblies. First, it is necessary to
12 remove from the rate base the value which we heretofore placed on
13 the uranium and plutonium material contained in the spent nuclear
14 fuel assemblies. We have included a value of \$5,038,150 as an asset
15 and included this amount in our rate base determination. It would be
16 necessary to eliminate that value from the rate base since the
17 material will be disposed of rather than reprocessed. Secondly, it
18 is necessary to reflect the additional costs of writing off this
19 value and the cost of disposal of the radioactive materials. The
20 Company would propose, rather than to assign the costs totally in
21 the test year, that an amortization be provided over a reasonable time
22 period. A five-year amortization period would be proposed for the
23 value of the spent fuel assemblies and a ten-year period for the
24 disposal cost. The proposed accounting treatment would be to include
25 these adjustments as operating expenses in the test year and not as a

1 portion of the fuel expense. This would result in test year
2 adjustments to reflect the amortization amounts. The test year
3 adjustment for the amortization of the spent nuclear fuel
4 assemblies would be \$1,007,630 per year and for the disposal cost
5 of those assemblies the amortization would be \$1,318,980 per year.
6 These amounts are shown on revised Bradshaw Exhibit No. 5, and I
7 provided these adjustments to Mr. Davis for inclusion in the test
8 period cost of service.

CAROLINA POWER & LIGHT COMPANY

SUMMARY OF ADJUSTMENTS

For the Twelve Months Ended June 30, 1976

	<u>System Total</u>
1. Adjust for cost of Management Audit ordered by the North Carolina Utilities Commission	\$ 300,000
2. Adjust for amortization of Craven County plant site	78,407
3. To charge-off expenses of Madison County plant site	187,816
4. Adjust for normalization of hydro generation	899,394
5. Adjust wages and fringe benefits to normal year <u>1</u> / Related taxes <u>1</u> /	9,186,521 469,385
6. Adjust for postage increase	147,449
7. Adjust for nuclear property insurance	1,419,151
8. Adjust for Research and Development expense	1,979,102
9. Adjust depreciation expense to Plant in Service at June 30, 1976 Related deferred income taxes Related current income taxes	6,186,000 9,442,000 (8,918,000)
10. Adjust depreciation expense for Plant Placed in Service from June 30, 1976 through March 31, 1977	2,142,000
11. Adjust for F.I.C.A. tax increase	66,394
12. Adjust property tax to Plant in Service at June 30, 1976 Plant transferred 6-30-76 through 3-31-77	3,675,301 616,000
13. Adjust rate base for plant transfers June 30, 1976 through March 31, 1977	71,210,000
14. Adjust rate base for nuclear fuel posting error	211,565
15. Adjust working capital for additional Accounts Receivable required	2,419,000
16. Adjust to eliminate Fuel Deferral Revenues Expenses	(11,759,652) (12,234,997)

CAROLINA POWER & LIGHT COMPANY

SUMMARY OF ADJUSTMENTS

For the Twelve Months Ended June 30, 1976

	<u>System Total</u>
17. Adjust rate base for Brunswick No. 1 transferred to Plant in Service <u>1/</u>	\$323,471,998
18. Adjust depreciation expense for Brunswick No. 1 <u>1/</u> Related deferred income taxes <u>1/</u> Related current income taxes <u>1/</u>	13,593,000 9,784,000 (14,983,000)
19. Adjust property tax for Brunswick No. 1 <u>1/</u>	1,141,000
20. Adjust for amortization of nuclear fuel salvage <u>2/</u>	1,007,630
21. Adjust for amortization of nuclear fuel storage <u>2/</u>	1,318,980
22. Adjust for security costs at nuclear generating plants <u>2/</u>	543,691

1/ Revised adjustments2/ Additional adjustments

ADDITIONAL TESTIMONY
OF
JAMES M. DAVIS, JR.
FOR
CAROLINA POWER & LIGHT COMPANY

1 Q. What is the purpose of this additional testimony?

2 A. This testimony is intended to supplement the portion of my pre-filed
3 testimony relating to the operating results measured on a test period
4 basis for both the present rates of the Company and those requested
5 in this proceeding. I shall present revised exhibits related to the
6 June 30, 1976 historical test period which contain additional adjust-
7 ments to revise the test period figures for changed conditions which
8 have occurred since the preparation of the original exhibits.

9 Revised Davis Exhibit No. 1 shows the operating results at the
10 present rates. This exhibit differs from the original filed Exhibit
11 No. 1 in the following areas:

12 1. The revised test year adjustments presented in the additional
14 testimony of Mr. Paul Bradshaw have been included in the test year
15 operating results. These adjustments include increases in the pay-
16 roll expense and operating expenses to provide additional security
17 provisions at our nuclear generating plants.

18 2. The adjustments related to the addition of the Brunswick No. 1
19 nuclear generating unit have been restated based on the cost of the unit
20 as of its commercial service date. The adjustment to plant in service
21 to add Brunswick No. 1 was included in the original exhibit at an esti-
22 mated cost of \$331,384,000. The unit was subsequently placed into

1 service on March 18, 1977, and the amount transferred to plant at
2 that time was \$323,471,998. This actual cost has been used in the
3 preparation of the revised exhibits and the related depreciation
4 and tax expenses have been adjusted to reflect the actual cost.

5 3. The test year operating results have been adjusted to
6 include the change in the value and disposal costs of the spent
7 nuclear fuel assemblies which have been removed from our nuclear
8 reactors. The required test year adjustments are described in the
9 additional testimony of Mr. Paul Bradshaw and include removal of
10 the spent nuclear fuel from the rate base, amortizations of the
11 spent nuclear fuel assemblies and the cost of permanent storage of
12 the radioactive uranium and plutonium materials.

13 4. The test year operating results have been adjusted to include
14 the change in nuclear fuel costs described in the testimony of Mr. Larry
15 E. Smith. This change would result in an increase in the test year
16 nuclear fuel expense of \$11,461,624. The net effect of the revised
17 fuel cost is a reduction in the revenue credit that would have been
18 provided by the fuel adjustment charge during the test period. The
19 original adjustment resulting from increased nuclear generation for
20 North Carolina Retail was \$34,518,582. The revised revenue reduction
21 based on the increased nuclear fuel cost would be \$26,618,913.

22 Revised Davis Exhibit No. 4 shows the effect of the rates request-
23 ed in this proceeding. The figures in this exhibit include the effects
24 of the revisions and updating adjustments listed above. In each of the
25 revised exhibits, Davis No. 1 and Davis No. 4, it has been necessary to

1 adjust the tax computations to show the effect of the revenue,
2 expense, and rate base adjustments. The test year computations
3 and allocations were made exactly on the same basis as the
4 original pre-filed exhibits.

5 Q. Concerning the change in the cost of nuclear fuel, are you familiar
6 with the testimony of Mr. Larry Smith in this proceeding?

7 A. Yes, I am. I support the recommendation of Mr. Smith that we revise
8 our nuclear fuel expense to reflect the total cost of the nuclear
9 fuel, including permanent disposal of the radioactive materials. It
10 is clear from the testimony of Mr. Smith that reprocessing of uranium
11 and plutonium materials contained in the spent nuclear fuel assemblies
12 will not occur as provided in the present cost of nuclear fuel.
13 Since reprocessing will not occur, it is necessary to stop reflecting
14 the cost of reprocessing and the credits for recovered products in
15 the cost of nuclear fuel and to include in its place the cost of
16 permanent disposal of the removed fuel assemblies.

17 I have included an adjustment to reflect an increase in the test
18 period nuclear fuel expense based on the difference in the expense
19 levels between the costs including reprocessing and the revised costs
20 which eliminate reprocessing and substitute disposal costs. This
21 change would result in a system-wide increase of \$11,461,624 for the
22 test period nuclear fuel expense, or approximately 5 percent of the
23 total test period costs.

1 The inclusion of this additional test period fuel expense can
2 be reflected in either the fuel adjustment charge, as we have
3 proposed, or through the base rates, should the Commission decide to
4 alter the base fuel component contained in our requested rates. The
5 net effect of including the increased expense in the fuel adjustment
6 charge would be to reduce the revenue credit in the test year for
7 increased nuclear generation. The higher fuel expense would have
8 been reflected in the test year fuel adjustment charges in the twelve
9 months ending June 30, 1976. There would not have been any effect on
10 the net operating income for return.

11 Q. You have stated that the increase in nuclear fuel expense could be
12 reflected in the base rates rather than the fuel adjustment charge.
13 Would the Company be agreeable to this adjustment?

14 A. Yes, we would. The increase in nuclear fuel cost that we are request-
15 ing is a disposal cost similar to the disposal expense of fossil fuel
16 ash or other products of combustion. Those expenses from our fossil
17 units are included in our base rates rather than the approved fuel
18 charge. In the case of nuclear fuel, I believe it would be preferable
19 to include this cost component in the fuel adjustment charge, but we
20 would not object to it being included in the base rate charge.

21 I would point out that if the Commission were to decide to include
22 this cost component in the base rate, similar to the treatment now
23 provided to the nuclear lease rental payments, the net result would be
24 to increase the test period fuel expense and reduce the net operating
25 income and rate of return. An adjustment to the filed rates would then

1 be necessary to recover the revenues and produce the requested rate
2 of return. The total revenues related to this expense adjustment
3 would be the same whether it is included in the fuel adjustment charge
4 or the base rate.

5 Q. What difference in result is shown in the revised test period
6 exhibits you have presented?

7 A. The revised exhibits for the historical test period show slightly
8 lower indicated rates of return both at the present rates and at the
9 rates proposed in this proceeding. The updated and revised adjustments
10 to the test period reduced the rate of return on fair value rate base
11 from 8.439 percent to 8.426 percent and on fair value common equity
12 from 10.0 percent to 9.967 percent. The total apparent rate of return
13 on book common equity in the test year is reduced from 14.252 percent
14 to 14.225 percent.

15 This indicates that if the rates requested in this proceeding had
16 been in effect throughout the twelve months ending June 30, 1976, we
17 would have earned an apparent return on book common equity of
18 14.225 percent. This is only an indicated rate of return and it will
19 not be possible for the Company to realize this level of return on
20 book equity because the requested rates were not in effect during the
21 test period.

22 Q. Does this complete your testimony at this time?

23 A. Yes, it does.

Revised Exhibit H
Carolina Power & Light Company
Operating Experience
Test Year Ended June 30, 1976

Line No.	(1)	System Total			Apportioned to N. C. Retail		
		Total Per Books	Adjustments	Total With Adjustments	Total Per Books	Adjustments	Total With Adjustments
		(2)	(3)	(4)	(5)	(6)	(7)
		\$	\$	\$	\$	\$	\$
1.	<u>Operating Revenues</u>						
2.	Gross Operating Revenue	645,386,939					
3.	Contract Sales Credit	<u>(9,045,232)</u>					
4.	Net Operating Revenue	636,341,707	33,902,898	670,244,605	437,875,086	6,402,004	444,277,090
5.	Revenue Adjustment to Year-End Plant	-	<u>9,872,302</u>	<u>9,872,302</u>	-	<u>9,872,302</u>	<u>9,872,302</u>
6.	Adjusted Net Operating Revenue	636,341,707	43,775,200	680,116,907	437,875,086	16,274,306	454,149,392
7.	<u>Operating Expenses</u>						
8.	Operation & Maintenance Expenses	322,689,920					
9.	Contract Sales Credit	<u>(9,045,232)</u>					
10.	Net O & M Expenses	313,644,688	(13,424,267)	300,220,421	207,758,568	(7,159,048)	200,599,520
11.	O & M Expense Adjustment to Year-End Plant	-	4,619,816	4,619,816	-	4,619,816	4,619,816
12.	Fuel Deferral	<u>14,832,001</u>	<u>(12,234,997)</u>	<u>2,597,004</u>	<u>12,234,997</u>	<u>(12,234,997)</u>	-
13.	Adjusted Operation & Maintenance Expense	328,476,689	(21,039,448)	307,437,241	219,993,565	(14,774,229)	205,219,336
14.	Depreciation	55,782,236	21,921,000	77,703,236	37,189,919	13,994,458	51,184,377
15.	Taxes Other Than Income	49,163,147	8,180,215	57,343,362	36,381,093	4,950,322	41,331,415
16.	Income Taxes - State	5,252,661	(831,473)	4,421,188	3,692,183	(1,576,596)	2,115,587
17.	Income Taxes - Federal	37,153,014	(6,522,883)	30,630,131	30,581,553	(12,056,451)	18,525,102
18.	Investment Tax Credit	22,244,185	-	22,244,185	14,743,935	-	14,743,935
19.	Provision for Deferred Income Taxes	7,476,286	25,098,800	32,575,086	4,008,308	18,291,603	22,299,911
20.	Interest on Customer Deposits	<u>185,686</u>	-	<u>185,686</u>	<u>145,941</u>	-	<u>145,941</u>
21.	Total Operating Expenses	505,733,904	26,806,211	532,540,115	346,736,497	8,829,107	355,565,604
22.	<u>Operating Income For Return</u>	130,607,803	16,968,989	147,576,792	91,138,589	7,445,199	98,583,788

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

(1)	<u>System Total</u>	<u>Apportioned To North Carolina Retail Operations</u>
	(2)	(3)
	\$	\$
<u>Revenue Adjustments</u>		
Adjust for probable future revenues for plant in service at June 30, 1976	9,872,302	9,872,302
Adjust for annual effect of retail rate increases	55,561,782	43,314,974
Adjust for weather normalization	1,610,764	1,610,764
Adjust for initial and final bill proration	(167,251)	(145,169)
Adjust for annual effect of resale rate increase	29,845,271	-
*Adjust fuel clause revenue to reflect addition of Brunswick	(41,188,016)	(26,618,913)
Adjust to eliminate fuel deferral	<u>(11,759,652)</u>	<u>(11,759,652)</u>
Total Revenue Adjustments	43,775,200	16,274,306

*Indicates revised item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

	<u>System Total</u>	<u>Apportioned to North Carolina Retail Operations</u>
(1)	(2)	(3)
	\$	\$
<u>O&M Expense Adjustments</u>		
Adjust for probable future expenses for plant in service at June 30, 1976	4,619,816	4,619,816
*Adjust fuel expense to annualize addition of Brunswick	(32,585,876)	(20,857,245)
Adjust other O&M expenses to reflect addition of Brunswick	6,353,592	4,124,194
Adjust for test fuel - Brunswick	2,155,823	1,399,371
Adjust purchased power expense to reflect addition of Brunswick	(7,366,106)	(4,694,263)
Adjust for NCUC audit	300,000	300,000
Adjust for amortization of Craven County Plant Site	78,407	48,296
Adjust for amortization of Madison Coutny Plant Site	187,816	115,689
Adjust for normalization of hydro generation	899,394	575,675
*Adjust for wages and fringe benefits at March, 1977	9,186,521	6,731,191
Adjust for postage increase	147,449	122,120

*Indicates revised item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

(1)	<u>System Total</u>	<u>Apportioned to North Carolina Retail Operations</u>
	(2)	(3)
	\$	\$
<u>O&M Expense Adjustments (Continued)</u>		
Adjust to eliminate fuel deferral	(12,234,997)	(12,234,997)
Adjust for nuclear property insurance	1,419,151	874,156
**Adjust for additional security at production plants	543,691	334,898
**Adjust for amortization of spent nuclear fuel	1,007,630	644,954
**Adjust for spent nuclear fuel disposal cost	1,318,980	844,240
Adjust for research and development expense	1,979,102	1,327,517
Adjust for additional connect and disconnect charges	337,507	337,507
Adjust for weather normalization	<u>612,652</u>	<u>612,652</u>
Total O&M Expense Adjustments	(21,039,448)	(14,774,229)
<u>Depreciation Expense Adjustments</u>		
Adjust for plant in service at June 30, 1976	6,186,000	4,151,595
*Adjust to include Brunswick #1 in plant in service	13,593,000	8,376,949
Adjust to include other plant additions through March, 1977	<u>2,142,000</u>	<u>1,465,914</u>
<u>Total Depreciation Expense Adjustments</u>	21,921,000	13,994,458

*Indicates revised item
**Indicates additional item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

(1)	System Total (2)	Apportioned to North Carolina Retail Operations (3)
	\$	\$
<u>General Tax Adjustments</u>		
Adjust for gross receipts tax on retail revenue adjustments	3,315,847	3,279,172
Adjust to annualize 1976 resale rates	1,726,521	-
*Adjust for Brunswick fuel clause	(2,124,654)	(1,597,135)
Adjust for elimination of fuel deferral	(705,579)	(705,579)
Adjust property tax to plant in service at June 30, 1976	3,675,301	2,465,269
*Adjust property tax to reflect addition of Brunswick	1,141,000	702,824
Adjust for property tax on other plant	616,000	413,192
Adjust for increases in FICA taxes	66,394	48,649
*Adjust for payroll taxes on wage increase adjustment	<u>469,385</u>	<u>343,930</u>
<u>Total General Tax Adjustments</u>	8,180,215	4,950,322

*Indicates revised item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976, Test Year

(1)	System Total	Apportioned To North Carolina Retail Operations
	(2)	(3)
	\$	\$
<u>State Income Tax Adjustments</u>		
*Adjust for tax effect of revenue and expense adjustments	2,535,447	743,838
Adjust for interest expense on plant at June 30, 1976	68,364	45,856
*Adjust interest to capital structure at June 30, 1976	(661,684)	(661,684)
Adjust tax on year-end depreciation and normalization	(1,015,000)	(621,359)
*Adjust for tax depreciation - Brunswick #1	<u>(1,758,600)</u>	<u>(1,083,247)</u>
<u>Total State Income Tax Adjustments</u>	(831,473)	(1,576,596)
<u>Federal Income Tax Adjustments</u>		
*Adjust for tax effect of revenue and expense adjustments	19,066,551	5,593,663
Adjust for interest expense on plant at June 30, 1976	514,101	344,841
*Adjust interest to capital structure at June 30, 1976	(4,975,863)	(4,975,863)
Adjust tax on year-end depreciation and normalization	(7,903,000)	(4,873,073)
*Adjust for tax depreciation - Brunswick #1	<u>(13,224,672)</u>	<u>(8,146,019)</u>
<u>Total Federal Income Tax Adjustments</u>	(6,522,883)	(12,056,451)

*Indicates revised item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976, Test Year

(1)	System Total	Apportioned To North Carolina Retail Operations
	(2)	(3)
	\$	\$
<u>Provision for Deferred Income Taxes Adjustments</u>		
Adjust to eliminate fuel deferral	5,872,800	5,872,800
Adjust for income tax normalization	9,442,000	6,392,139
*Adjust for Brunswick income tax normalization	<u>9,784,000</u>	<u>6,026,664</u>
Total Provision for Deferred Income Taxes Adjustment	25,098,800	18,291,603
<u>Total Operating Expense Adjustments</u>	26,806,211	8,829,107
<u>Income for Return</u>		
Effect of Revenue and Expense Adjustments	<u>16,968,989</u>	<u>7,445,199</u>
<u>Plant in Service Adjustments</u>		
*Adjust to include Brunswick #1 in plant in service	323,471,998	199,366,542
Adjust to include Other Plant additions through March, 1977	<u>71,210,000</u>	<u>48,464,135</u>
<u>Total Plant in Service Adjustments</u>	394,681,998	247,830,677

*Indicates revised item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

(1)	System Total	Apportioned to North Carolina Retail Operations
	(2)	(3)
	\$	\$
<u>Accumulated Depreciation Adjustments</u>		
Adjust for plant in service at June 30, 1976	(6,186,000)	(4,151,595)
*Adjust to reflect addition of Brunswick #1	(13,593,000)	(8,376,949)
Adjust for plant additions through March, 1977	<u>(2,142,000)</u>	<u>(1,465,913)</u>
<u>Total Accumulated Depreciation Adjustments</u>	(21,921,000)	(13,994,457)
<u>Nuclear Fuel Adjustments</u>		
Adjust to correct posting error	211,565	135,416
**Adjust spent nuclear fuel	(5,038,150)	(3,224,769)
Adjust nuclear fuel - Brunswick	<u>20,841,000</u>	<u>13,339,701</u>
<u>Total Nuclear Fuel Adjustments</u>	16,014,415	10,250,348
<u>Working Capital Adjustments</u>		
*Adjust cash allowance related to O&M expense adjustments	(1,709,167)	(1,259,996)
Adjust cash working capital for accounts receivable	2,419,000	2,419,000
Adjust cash working capital for Brunswick tax accrual	871,000	536,511
Adjust material and supplies to eliminate fuel stock deferral	(1,273,209)	(1,273,209)

*Indicates revised item

**Indicates additional item

Revised Exhibit H
(Continued)

Summary of Adjustments
June 30, 1976 Test Year

(1)	System <u>Total</u> (2)	AppORTIONED TO North Carolina <u>Retail Operations</u> (3)
	\$	\$
Adjust material and supplies - fuel stock	(4,279,386)	(2,739,107)
Total Working Capital Adjustments	(3,971,762)	(2,316,801)
<u>Total Rate Base Adjustments</u>	<u>384,803,651</u>	<u>241,769,767</u>

Revised Exhibit I
Carolina Power & Light Company
Effect of Proposed Increase - North Carolina Retail Operations
June 30, 1976

<u>Line No.</u>		<u>Present Rates</u>	<u>Proposed Increase</u>	<u>Requested Rates</u>
(1)		(2)	(3)	(4)
		\$	\$	\$
1.	<u>Operating Revenues</u>			
2.	Net Operating Revenues	454,149,392	69,238,676	523,388,068
3.	<u>Operating Revenue Deductions</u>			
4.	Net Operation & Maintenance	205,219,336		205,219,336
5.	Depreciation	51,184,377		51,184,377
6.	Taxes Other Than Income	41,331,415	4,154,321	45,485,736
7.	Income Taxes - State	2,115,587	3,905,061	6,020,648
8.	Income Taxes - Federal	18,525,102	29,366,061	47,891,163
9.	Investment Tax Credit - Net	14,743,935		14,743,935
10.	Deferred Income Taxes - Net	22,299,911		22,299,911
11.	Interest on Customer Deposits	<u>145,941</u>		<u>145,941</u>
12.	Total Revenue Deductions	355,565,604	37,425,443	392,991,047
13.	Net Operating Income for Return	98,583,788	31,813,233	130,397,021
14.	<u>Original Cost Net Investment</u>			
15.	Electric Plant in Service	1,490,661,836		1,490,661,836
16.	Net Nuclear Fuel	23,427,311		23,427,311
17.	Less: Accumulated Depreciation	<u>238,467,644</u>		<u>238,467,644</u>
18.	Net Electric Plant	1,275,621,503	-	1,275,621,503
19.	<u>Allowance for Working Capital</u>			
20.	Materials and Supplies	50,393,435		50,393,435
21.	Cash Allowance	36,876,839		36,876,839
22.	Less: Accrued Taxes	13,330,701		13,330,701
	Customer Deposits	<u>3,130,992</u>		<u>3,130,992</u>
23.	Total Working Capital Allowance	70,808,581	-	70,808,581
24.	Total Original Cost Net Investment	1,346,430,084	-	1,346,430,084
25.	Fair Value Rate Base	1,547,529,943		1,547,529,943
26.	Return on Fair Value Rate Base	6.370		8.426

Revised Exhibit I (Continued)
Carolina Power & Light Company
North Carolina Retail Operations
June 30, 1976

Line No.		Fair Value Rate Base	Ratio %	Embedded Cost or Return on Common Equity	Net Operating Income
	(1)	(2)	(3)	(4)	(5)
		\$	%	%	\$
1.	<u>CAPITALIZATION</u>	<u>PRESENT RATES - FAIR VALUE RATE BASE</u>			
2.	Long-Term Debt	624,635,845	40.364	7.720	48,221,887
3.	Preferred Stock	189,887,035	12.270	8.013	15,215,648
4.	Common Equity (including 1971 job development credits)	671,811,816	43.412	5.232	35,146,253
5.	Deferred Income Taxes	<u>61,195,247</u>	<u>3.954</u>	<u>0.000</u>	<u>-</u>
6.	Total Capitalization	1,547,529,943	100.000	6.370	98,583,788
7.	<u>CAPITALIZATION</u>	<u>REQUESTED RATES - FAIR VALUE RATE BASE</u>			
8.	Long-Term Debt	624,635,845	40.364	7.720	48,221,887
9.	Preferred Stock	189,887,035	12.270	8.013	15,215,648
10.	Common Equity (including 1971 job development credits)	671,811,816	43.412	9.967	66,959,486
11.	Deferred Income Taxes	<u>61,195,247</u>	<u>3.954</u>	<u>0.000</u>	<u>-</u>
12.	Total Capitalization	1,547,529,943	100.000	8.426	130,397,021

Revised Exhibit I (Continued)

CAROLINA POWER & LIGHT COMPANY

North Carolina Retail Operations
Total Return on Book Common Equity
Test Year Ended June 30, 1976

Line No.	Description	Total Company Capitalization	Ratio	Present Rates				Proposed Rates			
				N. C. Retail Original Cost Net Investment	Rate Earned	Net Operating Income	Overall Rate Earned	N. C. Retail Original Cost Net Investment	Rate Required	Net Operating Income	Overall Rate Required
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		\$	%	\$	%	\$	%	\$	%	\$	%
1.	Long-term Debt	1,105,361,294	46.392	624,635,845	7.720	48,221,887	3.582	624,635,845	7.720	48,221,887	3.582
2.	Preferred Stock	336,018,400	14.103	189,887,035	8.013	15,215,648	1.130	189,887,035	8.013	15,215,648	1.130
3.	Common Equity:										
4.	Common Stock	632,455,781									
5.	Retained Earnings	171,630,129									
6.	Deferred Investment Tax Credit (1971 Rev. Act)	28,890,031									
7.	Total Common Equity	832,975,941	34.960	470,711,957	7.467	35,146,253	2.610	470,711,957	14.225	66,959,486	4.973
8.	Interest Free Capital:										
9.	Deferred Taxes	108,282,642	4.545	61,195,247	0.000	-	0.000	61,195,247	0.000	-	0.000
10.	Total Capitalization	2,382,638,277	100.000	1,346,430,084	-	98,583,788	7.322	1,346,430,084	-	130,397,021	9.685

Revised Exhibit I (Continued)
CAROLINA POWER & LIGHT COMPANY

Line No.	Table No. 2 <u>Original Cost Net Investment</u> (1)	System Total			Apportioned to N. C. Retail		
		Total	Adjustments	Total With Adjustments	Total	Adjustments	Total With Adjustments
		(2)	(3)	(4)	(5)	(6)	(7)
		\$	\$	\$	\$	\$	\$
1.	Electric Plant in Service	1,852,851,887	394,681,998	2,247,533,885	1,242,831,159	247,830,677	1,490,661,836
2.	Accumulated Provision for Depreciation	(326,046,895)	(21,921,000)	(347,967,895)	(224,473,187)	(13,994,457)	(238,467,644)
3.	Net Electric Plant in Service	1,526,804,992	372,760,998	1,899,565,990	1,018,357,972	233,836,220	1,252,194,192
4.	Net Nuclear Fuel	20,586,749	16,014,415	36,601,164	13,176,963	10,250,348	23,427,311
5.	Working Capital:						
6.	Material and Supplies	86,295,131	(5,552,595)	80,742,536	54,405,751	(4,012,316)	50,393,435
7.	Cash Working Capital Allowance	<u>29,487,093</u>	<u>1,580,833</u>	<u>31,067,926</u>	<u>18,719,631</u>	<u>1,695,515</u>	<u>20,415,146</u>
8.	Total Net Investment	1,663,173,965	384,803,651	2,047,977,616	1,104,660,317	241,769,767	1,346,430,084
Table No. 3 <u>Replacement Cost Net Investment</u>							
9.	Electric Plant in Service	3,371,409,038	394,681,998	3,766,091,036	2,272,682,280	247,830,677	2,520,512,957
10.	Accumulated Provision for Depreciation	(965,982,934)	(15,735,000)	(981,717,934)	(655,176,325)	(9,842,863)	(665,019,188)
11.	Net Electric Plant in Service	2,405,426,104	378,946,998	2,784,373,102	1,617,505,955	237,987,814	1,855,493,769
12.	Net Nuclear Fuel	20,586,749	16,014,415	36,601,164	13,176,963	10,250,348	23,427,311
13.	Working Capital:						
14.	Materials and Supplies	86,295,131	(5,552,595)	80,742,536	54,405,751	(4,012,316)	50,393,435
15.	Cash Working Capital Allowance	<u>29,487,093</u>	<u>1,580,833</u>	<u>31,067,926</u>	<u>18,719,631</u>	<u>1,695,515</u>	<u>20,415,146</u>
16.	Total Net Investment	2,541,795,077	390,989,651	2,932,784,728	1,703,808,300	245,921,361	1,949,729,661

Revised Exhibit I (Continued)
CAROLINA POWER & LIGHT COMPANY

Line No.	Table No. 1 Fair Value Rate Base (1)	System Total			Apportioned to N. C. Retail		
		Total	Adjustments	Total With Adjustments	Total	Adjustments	Total With Adjustments
		(2) \$	(3) \$	(4) \$	(5) \$	(6) \$	(7) \$
1.	Electric Plant in Service	2,359,037,604	394,681,998	2,753,719,602	1,586,114,866	247,830,677	1,833,945,543
2.	Accumulated Provision for Depreciation	(539,358,908)	(19,859,000)	(559,217,908)	(368,040,899)	(12,610,593)	(380,651,492)
3.	Net Electric Plant in Service	1,819,678,696	374,822,998	2,194,501,694	1,218,073,967	235,220,084	1,453,294,051
4.	Net Nuclear Fuel	20,586,749	16,014,415	36,601,164	13,176,963	10,250,348	23,427,311
5.	Working Capital:						
6.	Materials and Supplies	86,295,131	(5,552,595)	80,742,536	54,405,751	(4,012,316)	50,393,435
7.	Cash Working Capital Allowance	<u>29,487,093</u>	<u>1,580,833</u>	<u>31,067,926</u>	<u>18,719,631</u>	<u>1,695,515</u>	<u>20,415,146</u>
8.	Total Rate Base	1,956,047,669	386,865,651	2,342,913,320	1,304,376,312	243,153,631	1,547,529,943