

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
SOUTH CAROLINA ELECTRIC AND GAS)
COMPANY)
(Virgil C. Summer Nuclear Station))

Docket No. 50-395

AFFIDAVIT OF MICHAEL L. KARLOWICZ, JR.
ON CONTENTION 2

I, Michael L. Karlowicz, being duly sworn, state as follows:

1. I am employed by the U. S. Nuclear Regulatory Commission as a Financial Analyst in the Office of State Programs.

2. Contention 2 states:

Contention A2 (a) The Applicant lacks the financial qualifications necessary to safely operate and decommission the Summer station in compliance with NRC rules and regulations;

(b) The sum allocated by the Applicant for the decommissioning of the Summer Plant (less than \$10 million) is grossly inadequate and does not conform to the requirements of 10 CFR § 50.33(f).

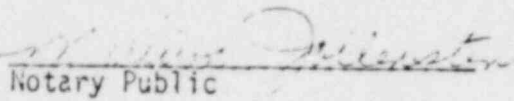
3. I performed the financial review for the V.C. Summer facility and prepared section 20 of the Supplemental NRC Staff Safety Evaluation Report (SSER) (NUREG-0717, dated April, 1981). The contents of that Section (attached) are true and correct to the best of my

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knowledge and I hereby adopt it as my direct testimony on Contention 2.


Michael L. Karłowicz, Jr.

Subscribed and sworn to before me
this *7th* day of *May* 1981.


Notary Public

My Commission expires: *July 1, 1982*

20 FINANCIAL QUALIFICATIONS

This evaluation supercedes Section 20 of the Safety Evaluation Report. As used in this section, the term "applicants" collectively refers to the South Carolina Electric & Gas Company and the South Carolina Public Service Authority.

20.1 General

The Nuclear Regulatory Commission's requirements for the determination of an applicant's financial qualifications for an operating license are stated in its regulations at 10 CFR 50.33(f) and Appendix C to 10 CFR Part 50. The former regulation states "[i]f the application is for an operating license, such information shall show that the applicant possesses the funds necessary to cover estimated operating costs or that the applicant has reasonable assurance of obtaining the necessary funds, or a combination of the two." In addition, "such information shall show that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of operation for the period of the license or 5 years, whichever is greater plus the estimated costs of permanently shutting down the facility and maintaining it in a safe shutdown condition. 10 CFR 50.33(f). Appendix C(I)(B) to 10 CFR Part 50 further explains that for purposes of the latter requirement, "it will ordinarily be sufficient to show at the time of filing of the application, availability of resources sufficient to cover estimated operating costs for each of the first five years of operation plus the estimated costs of permanent shutdown, and maintenance of the facility in a safe condition." This subsection concludes with the expectation that "in most cases, the applicant's annual financial statements contained in its published annual reports will enable the Commission to evaluate the applicant's financial capability to satisfy this requirement." Ibid.

On December 31, 1980, in response to our request submitted pursuant to Appendix C (IV) to 10 CFR Part 50, the South Carolina Electric & Gas Company (the Company) and the South Carolina Public Service Authority (the Authority) submitted the necessary financial information. This information addressed the applicants' financial qualifications to operate and shut down, if necessary, and maintain the Virgil C. Summer Nuclear Station, Unit 1 in a safe condition. The following analysis constitutes the NRC staff's evaluation of the applicants' submittal and addresses the financial qualifications of the applicants to operate the facility, shut it down, if necessary, and maintain it in a safe condition.

20.2 Business of Applicants

South Carolina Electric & Gas Company is a corporation organized and operating under the laws of the State of South Carolina. The Company is an investor-owned public utility engaged principally in the generation, purchase, transmission, distribution, and sale of electric energy and purchase and sale of natural gas for residential, commercial, industrial and other purposes to the public in an area comprising the central southern and southwestern sections of South Carolina. South Carolina Electric & Gas Company serves electricity to 336,700 customers including three municipalities, certain rural cooperative associations, and

two military installations. The Company's rates and operations are regulated by the Public Service Commission of South Carolina.

The South Carolina Public Service Authority (known otherwise as Santee Cooper) is an agency of the State of South Carolina. The Authority operates an integrated electric utility system, including facilities for generation, transmission, and distribution of electric power and energy at retail and wholesale. The Authority serves approximately 265,000 customers in the State of South Carolina. The Authority is required to establish rates and charges which are adequate to provide sufficient revenues to pay debt service when due on its obligations, make required payments when due into its lease and capital improvement funds, and to pay the costs of operation and maintenance of the Authority's system and all necessary repairs, replacements, and renewals, among other things. No other agency has jurisdiction over its rates.

20.3 Estimated Operating Costs of Facility

For the purpose of estimating the facility's operating costs, the applicants have assumed that 1983 will be the first full year of commercial operation. Estimates of the total annual cost of operating the Virgil C. Summer Nuclear Station, Unit 1 for each of the first five years are presented in Table 20-1, below. All operating estimates for facility cost are based upon a peak net electrical capacity of 900 megawatts and total estimated construction costs of \$1,031.9 million. At the present time the facility is 97 percent complete in construction. Operating costs include all costs associated with the capital investment and operation and maintenance including nuclear fuel.

TABLE 20-1

Estimate of Total Annual Cost of Operation
of Virgil C. Summer Nuclear Station, Unit 1

	<u>1983</u>	<u>1984</u>	<u>Year</u> <u>1985</u>	<u>1986</u>	<u>1987</u>
<u>Applicants' Estimate</u>					
Plant Capacity					
Factor (percent)	70.0	70.0	84.0	70.0	70.0
Annual Cost of					
Operation (millions)	\$264.8	\$263.6	\$273.5	\$267.7	\$271.6

20.4 Estimated Costs to Decommission the Facility

Since the applicants have not, at this time, made a final selection of the proposed method of decommissioning the facility, a detailed cost estimate for such expenses has not been supplied. Such options of decommissioning methods include safe storage (mothballing), entombment, dismantlement, or a combination of either of the first two methods with dismantlement occurring on a deferred basis after completion of the initial decommissioning activity. The applicants,

however, have provided a general estimate that such costs could range from \$1 million plus an annual maintenance charge of \$100,000 for the lower level of decommissioning to \$70 million for complete dismantlement.

Under contract for the NRC, the Battelle Pacific Northwest Laboratory issued its report "Technology, Safety and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station," NUREG/CR-0130 (June 1978). In both this report and its August 1979 Addendum the Battelle Laboratory estimated the costs of decommissioning various types of reference pressurized water reactors under various types of decommissioning methods. The maximum cost of decommissioning for the immediate dismantlement method was estimated by Battelle to cost a total of \$39 million. Accordingly, as an element of conservatism, the applicants' \$70 million maximum estimate of decommissioning expenses has been adopted herein as the basis in evaluating its ability to finance such amounts.

20.5 Reasonable Assurance of Funds-General

Our evaluation of the financial qualification of the South Carolina Electric & Gas Company and the South Carolina Public Service Authority included consideration of the Commission's decision in Public Service Company of New Hampshire, (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 18 (1978), affirmed sub nom, New England Coalition on Nuclear Pollution v. NRC, 582 F. 2d 87 (1st Cir. 1978), which states, "the applicant must have a reasonable financing plan in light of relevant circumstances."

In consideration of the foregoing cost estimates, the following analysis will evaluate the reasonableness of the Company and Authority financial plans in covering the various amounts that will result from the operation of the facility.

In general, an evaluation of the financing plans to meet operational expenses, TMI facility modifications, operating costs, and decommissioning costs can only reasonably be considered in relation to the applicant's nature of business, its size in revenue, assets, net income, and overall financial strength. The near-term financial outlook of the Company and Authority is also given consideration. Because the Company and the Authority are ongoing entities, such an evaluation requires a review of the financial results of their operation over a sustained period of time. Since finance discounts capital proportionate with time, emphasis is placed upon recent performance.

Long-term financial considerations are also important in the financial review since some costs will occur over an extremely long time. However, the number of variables such as interest rates, the state of the stock and bond markets, inflation, and the cost of fuel and labor, among many others, make long-term financial forecasting inherently uncertain. Therefore, for long term forecasts, the staff places primary reliance on recent performance and current characteristics of the applicant's financial condition. In consideration of those relevant circumstances, the following evaluates the reasonableness of the financial plan.

20.6 Reasonable Assurance of Funds-Cost of Operation

The applicants plan to recover all costs of operation through revenues derived from their customers in their system-wide sales of electricity. Under the

Joint Operation Agreement the total costs of the facility's operation will be recovered in proportion to each applicant's ownership interests as follows: South Carolina Electric and Gas Company - 66.667 percent and South Carolina Public Service Authority - 33.333 percent. As stated earlier, by reason of rate regulation, South Carolina Electric and Gas Company's rates may only be increased upon approval by the Public Service Commission of South Carolina.

The sole purpose of the operation of the facility will be the production of electricity for the service of the applicants' customers. Because such capability will qualify the facility as a productive asset, from an accounting viewpoint such property will reasonably be expected to qualify as "property used and useful in providing retail electric service to the public."*

As a consequence of this, the facility's cost of construction, including amounts allowed for funds used during construction, will be included in South Carolina Electric & Gas Company's rate base for regulatory ratemaking purposes in the amount its investments in it. Under South Carolina rate regulation, rate base inclusion of the facility will allow the Company recover the capital costs associated with its construction which are interest on debt, and a reasonable return including dividends on preferred and common stock. The same regulatory treatment also allows recovery of all fixed and variable operation and maintenance expenses necessary for the production of power. Tax costs may also be recovered through customer charges.

In accordance with its bond indenture and state law, the South Carolina Public Service Authority will adjust and collect its proportionate share of operating costs over the life of the facility. The Authority's bond indentures and basic expansion bond resolution require that the Authority establish, maintain, and collect rates sufficient to pay principal and interest on all bonds, maintain all reserve accounts related to its bonds, to pay all payments in lieu of taxes, and to pay any and all amounts which it may become obligated to pay from revenues by lien or contract. As indicated earlier, the Authority possesses unilateral rate making authority to meet its legal requirements.

As would be expected, review of the long-term statements of operations show consistent recovery of their historical costs of operation. This may be noted in Table 20-2.

The Company and Authority have demonstrated the ability to achieve consistent recovery of capital and operating costs for all other facilities they have constructed and operated. The applicants have accomplished this recovery due to the nature and character of their business as electric utilities. Therefore, it is reasonable to conclude that the plan to finance the facility's operation through revenues derived from rates charged to customers for utility service, represents a reasonable financing plan in light of relevant circumstances.

20.7 Reasonable Assurance of Funds - Cost of Decommissioning

The Company and the Authority believe that decommissioning costs of the Virgil C. Summer Nuclear Plant will ultimately be allowed to be recovered in the rate process. Based on this assumption, both the Company's and the Authority's

*See in re Application of South Carolina Electric & Gas Co., SCPSC, Docket Nos. 79-196-E and 79-197-G, Order No. 80-375 at 26 (June 30, 1980).

TABLE 20-2

Financial Statement of Operations of
South Carolina Electric and Gas Company
and South Carolina Public Service Authority
(Dollars in Millions)

South Carolina Electric & Gas Company

<u>Year</u>	<u>12 months ending</u> <u>November 1980</u>	<u>1979</u>	<u>Calendar Year</u> <u>1978</u>	<u>1977</u>	<u>1976</u>
Operating Revenues:					
Electric	\$467.4	\$403.9	\$382.3	\$337.9	\$275.9
Total	627.2	544.4	486.1	418.4	349.8
Net Income	63.7	57.0	60.3	54.7	43.8
Total					
Capitalization	\$1,778.2	\$1,650.4	\$1,522.7	\$1,361.2	\$1,171.6

South Carolina Public Service Authority

<u>Year</u>	<u>12 months ending June 30</u>				
	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>
Operating Revenues:					
Electric	\$150.4	\$134.3	\$119.0	\$ 94.7	\$ 82.2
Total	151.8	135.7	122.6	97.6	85.1
Net Earnings	21.4	10.8	5.5	8.4	11.9
Net Utility					
Plant	950.6	759.8	577.9	437.5*	355.9*
Total					
Capitalization	\$1,336.4	\$1,197.8	\$1,009.6	\$627.8*	\$605.4*

*Data derived from Moody's Municipal & Government Manual.

intentions are to build the collection of these funds onto the respective depreciation rates of the facility. This method is known as the "Negative Net Salvage" approach. The premise behind using the "Negative Net Salvage" approach is that the ratepayers who receive the benefits of the nuclear facility over its service life should pay for its total cost (including the cost of decommissioning) and that future ratepayers should not be required to pay for facilities from which they derived little or no benefit. Based upon the maximum aggregate requirement of \$70 million for total estimated decommissioning expenses and a 40 year facility life, an annual payment of \$1.75 million would be necessary by the applicants to fund negative net salvage amounts. Based upon their proportionate level of ownership interests in the facility, under the Joint Operating Agreement the Company will be responsible for a \$1.17 million annual charge for decommissioning expenses and the Authority \$.58 million. To adjust for inflation, the applicants have stated that periodic reviews of decommissioning costs will be made for any changes in economic conditions and advances in technology, and such changes will be incorporated into the annual negative net salvage change for decommissioning costs.

The applicants have proposed that the collection of any decommissioning cost through depreciation rates would be accumulated in unfunded reserves by the Company and the Authority. Since the Company is regulated by the South Carolina Public Service Commission, its authorization will be required for the method and collection process of the decommissioning costs. The Authority, which is not subject to Public Service Company jurisdiction but subject to laws of the state of South Carolina, will adjust and collect their proportionate share of decommissioning cost over the life of the facility in accordance with the Authority's bond indenture and State law. The Authority's bond indentures and basic expansion bond resolution require the Authority to establish, maintain and collect rates sufficient to pay principal and interest on all bonds; to maintain all reserve accounts related to said bond; to pay all payments in lieu of taxes; and to pay any and all amounts which may now and hereafter become obligated to pay from the revenues of the authority by law or contract.

The applicants maintain and the staff concurs that the Company and the Authority are financially capable of decommissioning the facility at the expiration of its serviceable life regardless of which plan of action is undertaken. This opinion is based upon both the Company's and the Authority's historical and present financial strength. During the past 13 years the Company has completed over \$1.2 billion of external financing, while the Authority financed a like amount of \$1.2 billion during the same period of time. These financings for both companies were accomplished without restrictions during a period of chaotic market conditions with both companies maintaining their investment quality ratings, "A" for South Carolina Electric & Gas Company and "A1" and "A+" for the Authority. These constitute investment grade obligations. Of particular importance is that during the last eight years, 1973-80, of this thirteen year period, the two companies have been able to finance the construction of the facility at an estimated cost to date of \$825 million. It is the opinion of the Company and the Authority and the staff concurs, that if they are financially able to raise \$825 million in eight years to construct this plant in addition to their other construction requirements, there is reasonable assurance they will be able to decommission the nuclear plant at the end of its useful life regardless of which of the three methods they may elect to use.

As of November 30, 1980, South Carolina Electric & Gas Company had assets of \$1.8 billion, operating revenues of \$627.2 million and retained earnings of \$128.0 million, while the Authority had assets of \$1.4 billion, operating revenues of \$178.2 million and retained earnings of \$121.6 million. Annual decommissioning fund amounts will be less than 0.2 percent of 1980 revenues for the Company and slightly more than 0.3 percent for the Authority. Clearly, these levels of expense for decommissioning will not be prohibitive to finance considering the size of the Company and Authority operations.

Additionally, since the NRC requires that any operating reactor be safely decommissioned when retired for the protection of the public health and safety, it is reasonable to assume that those amounts will be allowed in customer rate charges or necessary and reasonable expenses. Accordingly, it is reasonable to believe that the plan to finance these expenses from customer revenues constitutes a reasonable financing plan in light of relevant circumstances.

Moreover, although the NRC requires no specific plan to fund decommissioning expenses, we believe that the plan to fund such amounts provides the necessary element of assurance in that it constitutes a reasonable method for obtaining the necessary amounts of proceeds to meet decommissioning costs. As stated earlier in Section 20.7, the Company and the Authority intend to adjust their annual charges for negative net salvage amounts to compensate for any changes in the decommissioning cost estimate. This constitutes an additional level of assurance that decommissioning funds will be available when necessary.

Furthermore, should additional amounts be needed over and above those realized as negative net salvage, the Company and Authority have two other traditional sources of funds available to meet any such amounts. The first source is the applicants' internal cash generation attributable to: (1) depreciation expenses for all utility plant; (2) retained earnings for the Company; and (3) normalized tax depreciation and levelized investment tax credits for the Company. The second source of funds is the external capital market. As public utilities constitute the most capital-intensive industry in the United States, they have long had access to funds in the public securities market. To access such additional external funds both the Company and the Authority would issue debt in the form of bonds and the Company would also issue additional preferred or common stock, or a combination of each. As stated earlier, the applicants' demonstrated ability in raising \$1.2 billion each over the past 13 years leads one to reasonably conclude they would have little difficulty in financing any additional amounts over the \$70 million estimate in costs required by the decommissioning of the facility.

20.8 Conclusion

In accordance with the regulations cited herein an applicant must demonstrate that it has reasonable assurance of obtaining the necessary funds to cover the estimated costs of the activities contemplated under the license. As stated earlier, the Commission has determined in Seabrook that the reasonable assurance requirement for financial qualifications is a reasonable financing plan in light of relevant circumstances. Based upon the preceeding analyses of their proposed financing plans, we conclude that South Carolina Electric & Gas Company and South Carolina Electric Power Authority have reasonable financing plans in light of

relevant circumstances to operate, and shut down, if necessary, and maintain the Virgil C. Summer Nuclear Station, Unit 1 in a safe condition.

Accordingly, we have determined that the Company and the Authority have reasonable assurance under 10 CFR 50.33(f) of obtaining the necessary funds to cover the estimated operating costs to the extent of their ownership interest in the facility. In this respect, the Company and the Authority have demonstrated they have availability of resources sufficient to cover estimated costs for each of the first five years of operations plus the estimated costs of permanent shutdown and maintenance of the facility in a safe condition. 10 CFR Part 50, Appendix C(I)(B). As a consequence of this, we find that the applicants are financially qualified to operate and safely decommission the Virgil C. Summer Nuclear Power Station, Unit 1. Our conclusion is based upon both the Company's and the Authority's status as public utilities, the size of their operations, their demonstrated ability to achieve revenues sufficient to cover each of their operating and capital costs, and their successful history of obtaining capital in amounts generated both internally and in the external markets.

PROFESSIONAL QUALIFICATIONS OF MICHAEL L. KARLOWICZ

I am employed as a Financial Analyst by the U. S. Nuclear Regulatory Commission. My primary responsibility is the performance of the financial qualifications review of applicants during the nuclear licensing process. This review includes an analysis of estimated construction costs in construction permit proceedings and operating and decommissioning expenses in operating license matters. Concomitantly, the financial review encompasses the projected financing methods by which the required funds will be obtained. I also review the climate and trends of state utility commissions. In this regard, I have prepared financial testimony for inclusion in supplements to the Staff's Safety Evaluation Report and for presentation at Atomic Safety and Licensing Board Hearings.

My responsibilities also include the monitoring and keeping abreast of the money and capital markets, particularly those affecting the publicly and investor-owned electric utility sector of the economy. In this respect, I maintain a regular course of communication with the financial community. This includes utility securities officers and specialists representing the major rating firms, investment banking institutions, brokerage houses, and the Securities and Exchange Commission. Additionally, I serve as liaison for the NRC in financial matters with the Federal and State Utility Commissions.

I received a Bachelor of Science Degree with a major in Mathematics in 1972 from Saint Peter's College. In 1976, I received my Juris Doctorate from the Delaware Law School. Thereafter, I attended the post-graduate

L. L. M. tax law program at New York University in 1976 through 1977.

I have also undertaken studies in finance in the graduate program at the American University School of Business Administration.

Prior to my joining the U. S. Nuclear Regulatory Commission in December 1977, I spent three years with the New Jersey Department of the Public Advocate, Division of Rate Counsel. As both attorney and economist, my responsibilities included the representation of the public interest in litigation involving proposals of increases in rates or discontinuance of service by regulated industries. From 1969 through 1974, I was employed by Public Service Electric and Gas Company in their System Planning and Development Department and the Office of the Corporate Economist. There, I was responsible for conducting short, medium, and long-range studies in financial planning, the preparation of expert testimony, the implementation and development of financial modeling, and the performance of economic analysis.