

on September 5, 1980, with its principal offices at Jenkinsville, Fairfield County, South Carolina. It was organized for the purpose of protecting the health, safety and welfare of residents of Fairfield County and neighboring communities. Its members include persons who live, work and are actively involved in civic affairs in rural Fairfield County and in the communities of Winnsboro, Jenkinsville, Greenbrier, and Blair.

2. Many of the members of Fairfield United Action live, work, engage in outdoor recreational activities including fishing, boating, swimming, hunting, hiking and camping, consume vegetables, dairy products and meat, and breathe the air in close proximity to the Virgil C. Summer Nuclear Station, Unit 1, under construction near Jenkinsville. All members of Fairfield United Action are consumers of energy for residential, recreational and business uses. All now purchase electric energy from commercial sources and would make use of energy sources which are reasonably interchangeable with electricity such as solar, wind, biomass, and conservation techniques if such energy sources were more easily available and competitively priced. Petitioner's members include retail electric customers of South Carolina Electric & Gas Company, the Town of Winnsboro, Fairfield Electric Cooperative, and Newberry Electric Cooperative. Fairfield United Action's membership includes shareholders of South Carolina Electric & Gas Company common stock.

3. Through participation in the program of Fairfield United Action, its members have educated themselves on matters relating to the design, construction, and the probable effects on them, their families and the environment of the operation of the Summer Nuclear Station.

Some of Petitioner's members have only recently moved to Fairfield County. Many of Petitioner's members who have lived in Fairfield County for many years have until recently relied on information from South Carolina Electric & Gas Company or others acting on the Company's behalf concerning the design, construction and probable effects of operation of the Summer Nuclear Station which information they now believe to be false and misleading.

None of Petitioner's members who resided in proximity to the Summer Nuclear Station at the time of the filing of the Application for Operating License in 1977 had knowledge that they had interests which might be adversely affected by the granting of the license sought in this proceeding, of their rights and remedies then available to them, or of the Notice published in the Federal Register on April 18, 1977, by the Secretary to the Commission.

4. That as a result of their participation in Fairfield United Action Petitioner's members are informed and believe that the grant of an operating license to South Carolina Electric & Gas Company and its operation of the Virgil C. Summer Nuclear Station, Unit 1, will result in direct physical harm to the health and safety of themselves and their families and in direct injury to their economic interest.

5. That although Petitioner's members learned that the operation of the Summer Nuclear Station might adversely affect them they remained unaware of the rights and remedies available to them. Until about mid-February 1981, Petitioner was informed and believed that it had no right to participate as a party to this proceeding since the deadline for in-

intervention had passed in May 1977. It was further informed and believed until then that its interests were being represented, to some extent, by the existing Intervenor Brett Allen Bursey. About mid-February 1981, Petitioner was informed of a letter dated February 10, 1981, from counsel for the Applicant to the Licensing Board asserting that Intervenor Bursey was precluded "from putting on any witnesses or exhibits on his six admitted contentions," from raising any contentions related to post-Three Mile Island requirements already addressed by Commission Staff, and that the Intervenor should be in "total default." Upon being so informed Petitioner undertook an immediate and thorough inquiry into the status of this proceeding and its rights and remedies.

Petitioner is further informed that significant regulatory changes adopted by the Commission in light of the lessons learned from the accident at Three Mile Island, Unit 2, substantially expand the remedies available in an operating license proceeding beyond those available at the time of the filing of this Application in 1977 and that as to those matters as well good cause exists for Petitioner's failure to file until this time.

The ability of Petitioner's to inform themselves of developments in this proceeding has been severely hampered by the absence of a local public document room in Fairfield County for several years. Petitioner is informed that what filings exist were moved by the Applicant to the Richland County Public Library in Columbia some twenty-five miles from the plant, where inadequate shelf space and work space is available for

effective use, where the Applicant itself is responsible for maintaining the documents, but has left materials unopened and unfiled dating back several months, and where the library has cancelled its subscriptions to Commission filings of general interest on technical studies and of Commission rulings and decisions due to lack of space. The partial collection on file is maintained in a locked cage with limited access due to lack of staff. Petitioner is aware of no other public source for these materials in South Carolina.

Petitioner believes that it has consistently exercised all due diligence in this matter and that good cause exists for its failure to file this petition until this time.

6. That Petitioner's interest in protecting its members from harm to their health and safety and from injury to their economic interests can only be protected through full participation as a party to this proceeding with the right to offer evidence and to confront evidence offered by other parties. No existing parties will represent Petitioner's interest including the State of South Carolina whose participation has been limited, the Commission Staff which cannot represent the individual interests of Petitioner's members, and the existing Intervenor whose participation is now narrowly limited. The Applicant's interest is believed to be adverse to Petitioner's.

7. That Petitioner is informed and believes that only by its participation will the Licensing Board have a complete and sound record produced as a result of a full adversarial process upon which to reach

a reasoned and informed decision in this matter. That by reason of their life-long residence in proximity to the plant-site, Petitioner's members can offer unique working knowledge as to local geography, transportation, traffic conditions, and the ability of local residents to properly respond in the event of a radiological emergency. Petitioner's members also possess a unique knowledge of the organization and management of the Applicant gained through participation in other proceedings. Petitioner's members also include persons with training and experience in general medicine, demography, statistics, economics, and advanced research. Petitioner believes it will have access to valuable expert assistance in offering evidence in support of its contentions, herewith submitted and in preparing cross-examination for witnesses of other parties.

8. Petitioner is informed and believes that as to a large number of issues the contentions sought to be litigated by Petitioner are no broader in scope than the issues already joined by contentions raised by the existing Intervenor and issues raised by the Commission Staff and the Advisory Committee on Reactor Safeguards; and that the full and thorough litigation of these issues by Petitioner will not delay the proceeding any more than if fully litigated by other participants, but for the default of the existing Intervenor. As to the other issues raised by Petitioner, the amount by which issues are broadened or the proceedings are delayed will be insignificant in the light of the benefits gained through the development of a sound record and the public interest to be served in a thorough review of this operating license

application. Petitioner is prepared to cooperate with the Applicant, the Staff and the Licensing Board in the adoption of measures designed to expedite the proceedings and minimize delay.

9. That Petitioner is informed and believes that a reasonable probability exists that the granting of the license sought by the Applicants and their joint ownership and operation of the Virgil C. Summer Nuclear Station, Unit 1, will contravene the anti-trust laws of the United States and the policies clearly underlying those laws. That significant changes attributable to the Applicants have occurred since the issuance of the construction permit for this facility warranting the conduct of an anti-trust review and hearing in this matter and either the denial of the application for the operating license or the conditioning of such license on such terms as are necessary to minimize adverse anti-trust impacts.

Petitioner is informed and believes that the Applicants South Carolina Electric & Gas Company and South Carolina Public Service Authority have engaged individually and together in acts and conspiracies in restraint of trade, to acquire and maintain monopoly power, and to commit unfair trade practices to the direct injury of Petitioner's members who are consumers of electric energy sold by South Carolina Electric & Gas Company, rural electric cooperatives and municipal power systems purchasing power from the Applicants. Petitioner's members are forced to pay higher prices for such electricity and are denied access to reasonably interchangeable alternate energy sources or must pay higher prices for such alternatives because of such conduct. The acts of the Applicants

which effect such a contravention of the anti-trust laws and underlying policies include the wielding of monopoly power by South Carolina Electric & Gas Company in compelling the South Carolina Public Service Authority to join with it in improperly securing passage of territorial assignment legislation and legislative and regulatory authorization for joint ownership of the Summer Nuclear Station through the unlawful and improper manipulation of the state legislative and regulatory processes.

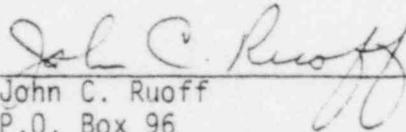
Petitioner is informed that the Central Electric Cooperative and the South Carolina Public Service Authority have recently entered into a power system coordination agreement disposing of some matters of dispute between them. Petitioner would respectfully assert that such an agreement between them does not cure or mitigate the injury suffered to its membership likely to result from the Applicants' conduct and the approval of the operating license application.

10. That based upon the foregoing Petitioner Fairfield United Action asserts a significant ability to contribute for the Licensing Board's consideration on substantial issues of law and fact which will not otherwise be properly raised or presented absent its participation in this proceeding.

WHEREFORE, having set forth its interest which will be affected in this proceeding, having shown good cause, and having submitted the contentions sought to be litigated and the bases therefore in the Supplement hereto and the Affidavits of eight of its members, which Supplement and Affidavits are incorporated herein, Fairfield United Action

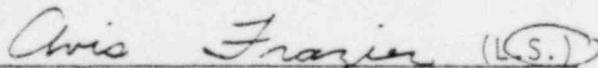
respectfully requests leave to intervene in these proceedings, the conduct of hearings and the denial of this application for an operating license unless so conditioned as to prevent injury to Petitioner's health, safety and economic interests.

Respectfully submitted,



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AFFIRMED and subscribed to
before me this 23 day of
March 1981.


NOTARY PUBLIC FOR SOUTH CAROLINA

My Commission Expires 11-17-90

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)
In the Matter of)
SOUTH CAROLINA ELECTRIC AND GAS)
COMPANY ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

SUPPLEMENT
TO
PETITION TO INTERVENE
AND
REQUEST FOR HEARINGS

DOCKET NO. 50-395 0L

Under provisions of 10 CFR 2.714(a)(3)(b) Petitioner herewith submits as a Supplement to its Petition to Intervene and Request for Hearings a list of the contentions which it seeks to have litigated in this proceeding together with the basis for each such contention, reserving fully its right to amend and make additions to this Supplement prior to the completion of the evidentiary hearing in this proceeding.

The Petitioner asks that should the Licensing Board construe any of these contentions as an attack upon any rule or regulation of the Commission, or any provision thereof, such rule or regulation be identified and the Petitioner allowed to petition the Commission for exception to or waiver of the application of such rule or regulation for purposes of this particular proceeding.

Contention 1

The overall corporate management of the Applicant is insufficiently experienced in the operations of a nuclear power facility and is generally deficient in management abilities essential to the safe operation of a nuclear power facility or properly to respond under accident conditions.

BASIS FOR CONTENTION 1

The accident and response to that accident by the operators of Three Mile Island, Unit 2, amply demonstrated that the management abilities of the utility are crucial to safe normal operations and to proper response to accident conditions.

The Applicant is the first utility to come before a Licensing Board for an Operating License since TMI-2 which does not have experience in the operation of a large nuclear power plant. This Applicant's only nuclear experience was over 15 years ago with the 17 MW CVTR which it operated in consortium with others.

In response to Staff concerns about organizational structure, the Applicant has undertaken significant steps to restructure corporate organization to consolidate corporate nuclear responsibilities under one senior corporate executive, the Vice President and Group Executive for Nuclear Operations.

The incumbent in that position, Thomas C. Nichols, is a long-time employee of the Applicant with extensive fossil plant experience. However, he has no training, background, or experience in nuclear operations and is not qualified "to assure a continual understanding of plant

conditions and safety considerations" (NUREG 0694, "TMI-Related Requirements for New Operating Licenses," I.B.1.2). Under cross-examination in proceedings before the South Carolina Public Service Commission (Docket Nos. 79-196-E and 79-196-G), Nichols demonstrated a serious lack of understanding of technical issues relating to nuclear power operation. He lacks the detailed knowledge and experience required to make informed decisions critical to the health and safety of the general public.

Examination of the resumes of nuclear operations personnel in the FSAR reveal serious deficiencies in the education, qualifications, and experience of management and operations personnel when compared to the Guidance Positions set forth in NUREG 0731 ("Guidelines for Utility Management Structure and Technical Resources"). Plant Manager Ollie S. Bradham does not hold either a bachelor's degree or an SRO license. Maintenance Supervisor Steve Smith does not possess the bachelor's degree called for there. The examples are numerous (see T.C. Nichols, "Comparison of Management/Technical Resources to Regulatory Guidance," report to NRC Staff, January 31, 1981). In comparing the education and experience of his staff to regulatory guidance, Nichols argues that the guidance for the Training Manager is met because Training Manager B.T. Estes, Jr., and his deputy Al Sanders, if taken together, meet the regulatory guidance.

Other persons with eminent qualifications hold positions for which those qualifications are irrelevant or insufficient. Mark Whitaker, Group Manager for Licensing and Nuclear Engineering, has held a number of responsible posts with the Applicant. He is a lawyer and an M.B.A.,

as well as a trained Electrical Engineer. However, he lacks the background in nuclear engineering and nuclear operations adequately to supervise the corporate Nuclear Engineering function. Likewise Emergency Coordinator, Ken Beale has extensive experience in Health Physics. However, he has neither experience nor training in emergency planning.

At a number of critical positions, the Applicant has appointed experienced and qualified assistants to a number of these unqualified managers. That is laudable, but leaves the responsibility for decisions to men not qualified "to assure a continual understanding of plant conditions and safety considerations."

Examination of the management and technical resources of the Applicant should extend beyond the scope of NUREG 0731 into the upper echelons of corporate management. Examination of senior corporate officials would reveal that they lack the experience and understanding of nuclear operations required to oversee and be involved in the normal or accident-condition operation of the Summer plant. No Operating License should be granted until responsible corporate management and operations positions are filled by qualified individuals.

Hearings in other proceedings involving the Applicant (SCPSC Docket Nos. 79-196-E, 79-196-G, and 76-645-E) have raised serious questions about the general management of the Applicant. Evidence presented in those hearings suggests that the Licensing Board should have little faith in corporate procedural manuals as establishing effective administrative controls.

The Board has indicated its desire to have senior corporate of-

ficials available during the Operating License hearings. Petitioner would offer to build a record on these issues through cross-examination of those witnesses as well as through discovery of recent studies of the Applicant's corporate operations referenced in other proceedings or which Petitioner is informed and believes to exist.

Contention 2

The Applicant lacks sufficient "hands on" experience among its reactor operator staff to safely run the Virgil C. Summer Nuclear Station, Unit 1, and no Operating License should be granted until adequate "hands on" experience is had by the Applicant's reactor operations staff.

BASIS FOR CONTENTION 2

During a July 8-10 visit by Staff members, Staff expressed a major concern to the Applicant that "There appeared to be insufficient hands-on operating experience with large pressurized water reactors in the operating organization (see SER at 22-13,14).

Examination of the resumes of Reactor Operators, Senior Reactor Operators, and Shift Supervisors reveals a dearth of experience on large operating PWRs. A number of the SRO's total nuclear power plant experience has been spent in training at the Virgil C. Summer Nuclear Station, Unit 1, with some additional simulator time.

Contention 3

The Applicant lacks the financial qualifications necessary to safely operate and decommission the Summer station in compliance with NRC rules and regulations.

BASIS FOR CONTENTION 3

The Applicant's "Response to Request for Additional Financial Information," dated 12/31/80 makes clear that the Applicant still has no notion what decommissioning costs will be for the Summer station (Response to Question 2). The proposed study of these costs has not been completed and Applicant makes no claim that it will be completed in time for the Licensing Board to consider it.

Applicant asserts that the anticipated costs of decommissioning "will ultimately be allowed to be recovered in the rate process," but offers no basis for that assumption.

Applicant has failed entirely to present evidence on its ability to safely maintain a spent fuel facility beyond the design life of the plant, despite the fact that no alternate facility for either temporary or permanent storage of Applicant's irradiated fuel assemblies is currently available to the Applicant. Assurances that a "political solution" will be found are insufficient to insuring the health and safety of the public should the Applicant find itself unable to meet its financial obligations in that regard.

Applicant's presentations on Estimated Annual Operating Costs fail to take into account potential major repair and/or replacement costs, such as can reasonably be expected for a PWR with Westinghouse steam generators.

Contention 4

The Applicant lacks the financial qualifications necessary to withstand the costs of various contingencies, including extended shutdowns of the reactor caused either by problems arising at the Summer reactor (up to a maximum of a TMI-type accident) or by generic problems similar to those which have arisen at existing reactors and which have caused shutdowns at other reactors potentially subject to those problems.

BASIS FOR CONTENTION 4

The Applicant, South Carolina Electric & Gas Company, has committed itself over the past decade to a program of construction which has required considerable financing. To finance the Summer station, the Applicant has incurred long-term debt of almost \$673 million (SCE&G Annual Report, 1979, p. 21). The equity ratio for the Company described by Executive Vice President for Finance Oscar Wooten during the last rate proceeding before the South Carolina Public Service Commission was only 36.3 % (common equity/capitalization), short of the goal of 40% which "should be the objective of any prudently managed utility . . ." (Wooten, pre-filed testimony contained in "Response to Request for Financial Information," p. 12). At that same place, Wooten notes that "In light of the incident at Three Mile Island, a 40 % equity ratio may soon be considered to be insufficient."

The Applicant, South Carolina Electric & Gas Company, lacks the debt structure which would permit it to weather an extended shutdown or the costs of repair and cleanup from a TMI-type accident or worse. Even the costs of repairs or replacements to the steam generators because of the generic design problems of Westinghouse steam generators are likely

to be more than the Applicant would be able to bear. However, experience suggests that such costs are not unreasonable to expect.

Contention 5

Preliminary monitoring of seismicity in the vicinity of the Summer plant suggests that an earthquake may already have occurred at the plant site which exceeded the Operating Basis Earthquake and equalled the Safe Shutdown Earthquake in the high frequency ranges which produce plant damage. Under such a circumstance, no Operating License should be granted.

BASIS FOR CONTENTION 5

On August 27, 1978, a seismic event produced a strong motion record of 0.25g peak horizontal component for the 180 degree component. The Operating Basis Earthquake acceleration for the Summer plant is 0.15g and the safe shutdown earthquake acceleration is 0.25g for structures founded on soil. (See discussion in SER, NUREG 0717, pp. 2-27 ff.)

These high acceleration values resulted from the largest earthquake yet measured at the Monticello Reservoir ($M_L = 2.8$). The Staff analysis in the SER states: "there is no reason to believe that the largest earthquake induced by the Monticello Reservoir has already occurred . . ." (p. 2-31).

Contention 6

The studies conducted to date by the Applicant do not present sufficient data upon which to base a conclusion, which can be assigned a high level of confidence, that seismic activity in excess of the design basis of the Summer plant will not occur in the immediate vicinity of the plant. Seismicity at the Summer plant should be monitored for a period of ten years from filling of the Monticello Reservoir and no Operating License should be granted until that monitoring study is completed and reviewed for adequacy. Part of that monitoring study should involve a test unloading of the Monticello Reservoir to determine the seismic effects of such an occurrence.

BASIS FOR CONTENTION 6

The Applicant has proposed that the maximum earthquake which can be expected to occur in the region of the Summer plant is of magnitude $M_L = 4.0$. The Staff has proposed two different levels of maximum earthquake magnitude, $M_L = 4.5$ and $M_L = 5.3$. Either level could generate high frequency ground motions in excess of SSE.

Applicant's consultant, Dr. Sheldon Alexander, admits: "First, I'll say up front we have no precise probability that one can defend based on all the data taken together (that the maximum magnitude will be $M_L = 4.0$)" (Transcript, ACRS Subcommittee on Electric Power, February 26, 1981, pp. 84-85). The consultants to the ACRS Subcommittee noted in their comments on presentations by Staff and Applicants that there was insufficient data available (Ibid., pp. 297-305).

Specific issues on which insufficient data has been assembled include an adequate definition of all the structures within a reasonable radius of the plant, the stresses at depths greater than 1-2 km, and the effects of unloading the reservoir.

Seismic events at other reservoirs, such as Clark Hill Reservoir (8/2/74), Lake Jocassee (8/25/79), and Oraville, California, suggest that seismicity related to reservoirs may not develop for several years after filling. Three years of monitoring is insufficient.

Further, the 1966 Indian earthquake, which occurred in a region whose seismicity could have been described in terms similar to those advanced by the Applicant for the Monticello Reservoir, argues that proceeding on the basis of insufficient data is not consistent with protecting the health and safety of the general public.

Contention 7

The Emergency Response Plans of the Applicants, the surrounding counties, and the State of South Carolina do not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency and do not conform to the requirements of NUREG 0654, Rev. 1, in that:

a) (II.B.1.) The Applicants plan does not meet the minimum staffing requirements as set forth in Table B-1.

b) (II.B.9.) The Applicants's plan includes agreements with local organizations which fail to delineate the authority, responsibilities, and limits on their actions.

c) (II.E.1.) The Applicants have failed to demonstrate the ability to notify local Emergency Preparedness officials, as distinguished from communications centers, within 15 minutes.

d) (II.G.1.) The Applicants have not adequately planned for the distribution of informational materials.

e) (II.J.8 and Appendix 4.) The Applicant has not developed realistic estimates of evacuation times and has not employed the methodology set forth in Appendix 4.

f) (II.J.10.c.) The Applicants have failed to provide adequate means for protecting those whose lack of mobility is impaired by lack of vehicles.

g) (II.J.10.e.) No plans have been made for the distribution and use of radioprotective drugs, such as Potassium Iodide, as a Protective Response for the general public.

h) (II.J.10.h.) Relocation centers are not located at least 5 miles from the Plume Exposure Pathway EPZ, e.g., Winnsboro High School is a scant 2-3 miles from the EPZ. All of the relocation centers in Fairfield County are within 10 miles of the EPZ.

i) (II.J.10.) Table 6.2 in Applicant's Plan suggests that sheltering is the only Protective Action contemplated for the general public.

j) ((II.J.10.M.) The plans do not set forth the bases for the choice of recommended Protective Actions from the plume exposure pathway during emergency conditions.

k) (II.L.1.) Hospital and medical services for the general public are not provided for.

l) (II.L.2.) On-site emergency first aid capability is inadequate.

m) (II.G.3.b.) The News Media Center is not located at the Applicant's Emergency Operations Facility.

n) (II.H.2.) The Interim Emergency Operations facility does not comply with the requirements of NUREG 0696, Rev. 1.

n) (Appendix 2.) The Applicant's meteorological monitoring equipment does not meet the requirements of Appendix 2. It lacks a viable back-up system with emergency power and is not seismically qualified.

o) (Appendix 3.B.2.) The Applicant has failed to demonstrate that its siren system will meet the requirements of Appendix 3, that the tests conducted by the Applicant on audibility were sufficient, and that the siren system to be installed has a high level of reliability including under seismic conditions which might occasion a radiological

emergency.

p) (Appendix 4.) The Applicant has failed to comply with the requirements of Appendix 4 for determining and describing evacuation times, has failed to establish the acceptability of criteria used to establish evacuation times, and has failed to demonstrate the capability of Applicant and State and local governments to assure timely evacuation under accident conditions.

q) Applicant's and local plans demonstrate a lack of cooperation in their development and planned implementation.

r) The Plume Exposure Pathway EPZ boundaries established in local plans are not based upon reasonable criteria which have been explicitly stated and demonstrated.

s) The failure to base Plume Exposure Pathway EPZs on rational and scientifically defensible bases which give reasonable assurance that the health and safety of the general public will be protected exposes students at Kelly Miller Elementary School and Greenbrier Head Start Center in Fairfield County to unwarranted risks to their health and safety.

t) And in other ways the Radiological Emergency Response Plans of the Applicant, the State of South Carolina, and the surrounding counties fail to comply with the requirements set forth therein.

BASIS FOR CONTENTION 7

Petitioner and its members possess unique knowledge of the people, roads, traffic patterns, and topography of Fairfield County and nearby communities and would assist the Licensing Board to build a record on the adequacy of emergency planning for the region.

In addition to bases offered in the statement of the contention, Petitioner would show that: (bases are listed by sub-contention letter)

a) Applicant's Table B-1 sets forth that Applicant would be unable to provide back-up support for several functions within the required thirty minutes. That the Chemistry/Radiochemistry function would not be staffed at all times.

d) Applicant plans only to mail informational materials to every postal holder. Many mail addresses in the area serve several households, so that a single "Occupant" mailing to each postal box would not reach every household. Posting of informational materials in local businesses will not sufficiently supplement inadequate mailings. Additional distribution methods should be required.

k) Arrangements for medical services at the Pinner Clinic in Parr, South Carolina, and Richland Memorial Hospital in Columbia, South Carolina, apparently apply only to employees of the Applicant and not to the general public.

l) Applicant's plan calls for only one person qualified in first aid techniques on each shift. Injury to that person or accident conditions requiring first attention to accident control duties could nullify that capability.

n) The Interim Emergency Operations Facility is located on-site. The facility is a temporary office structure which is not engineered for the design life of the plant, does not provide a protection factor equal to or greater than 5, and lacks adequate ventilation protection as required in NUREG 0696, Rev. 1, Table 2.

c) For example. All persons in Fairfield County are expected to evacuate to Winnsboro High School. Under typical wind conditions, that would be the least appropriate response for the majority of persons in the EPZ in Fairfield County. Those in the southern part of the County would be safer evacuating towards the Richland County facility. Those in the northern part of the EPZ would more wisely evacuate to the Newberry County center. No such coordination exists, however.

s) Young persons are especially susceptible to radiation injury. However, the Plume Exposure Pathway EPZ, which extends to nearly 12 miles just north of Kelly Miller School in Fairfield County, swings in to miss including that school in the EPZ by, quite literally, "shouting distance". Kelly Miller is an all-black elementary school. The Greenbrier Head Start Center is located nearby and also within view of the EPZ but not included in it.

t) Final plans have not been available to Petitioners from the four counties and the State of South Carolina.

Contention 8

Public Information Materials distributed by the Applicant relative to radiological emergency response planning are inaccurate, intentionally deceptive regarding the potential health effects of radiation, and present evacuation routes which could result in persons unwittingly evacuating through the plume.

BASIS FOR CONTENTION 8

The brochure entitled "V.C. Summer Emergency Information," which the Applicant says will be mailed to every household in the Plume Exposure Pathway, includes the following untruthful and inaccurate information:

- a) that the secondary water system in the steam line is "uncontaminated" and "pollution-free";
- b) that radiation health effects can only be detected at levels of 25,000 millirems and above.

These statements and additional verbiage in the brochure are designed to give residents a false sense of security. By failing to accurately describe the genuine health hazards, which are recognized by the body of the scientific community, the Applicant may lead residents to believe that accidents with long-term health consequences are not sufficiently important to warrant evacuation.

Further, the evacuation routes laid out in the brochure are irrational and could result in individuals unwittingly evacuating through the plume. A resident of Southwest Fairfield County (Zones C-1 and C-2) is directed to drive towards Winnsboro, which is the direction the prevailing winds could be expected to carry the plume.

Contention 9

The State of South Carolina and the counties surrounding the Summer station do not have the capability for implementing protective measures based upon protective action guides and other criteria as they apply to residents of the Plume Exposure Pathway who do not own or have access at all times to private vehicles.

BASIS FOR CONTENTION 9

The area within the Plume Exposure Pathway is predominantly rural and no public transportation system exists. Many of the residents of the area are old, sick, or poor and do not have transportation or are without transportation during significant periods of the day. Existing plans in Fairfield County, for example, call for the use of a) school busses when school is not in session, b) vans from the Council on Aging and Community Action Program, or c) city busses brought in from Columbia.

School busses in South Carolina are driven by high school students. If school were not in session, the drivers would not be available. The number of vans is limited and inadequate. The city busses from Columbia could not arrive in time, are unsuited to many of our country roads, and would be driven by drivers unfamiliar with the many nooks and crannies of the county.

Moreover, no door-to-door survey to identify the need has been undertaken. Newspaper ads were placed in the Winnsboro papers asking people who needed transportation to call the Emergency Preparedness Director's office. A good many people in rural Fairfield County do not read. Few

people in western Fairfield County read the Winnsboro papers. Many people in the area do not have telephone, and for many it is a long-distance telephone call to Winnsboro. Not surprisingly, the ads drew no response.

Contention 10

Radiological Emergency Response plans of the Applicant, the State of South Carolina, and the surrounding communities have been formulated without reference to the Draft Environmental Statement, Supplement (NUREG 0534, Supplement) and thus fail to address appropriate protective measures needed to provide radiological protection to all residents in the vicinity of the Summer station who might be threatened with injury or death from an accident greater than a design basis accident.

BASIS FOR CONTENTION 10

During testimony before the ACRS Subcommittee on Electric Power (February 26, 1981), Emergency Coordinator Ken Beale conceded that no reference had been made to the Draft ES in preparing the emergency plans. The first ES which evaluates the environmental impacts of a so-called Class 9 accident, this Supplement should have served as the cornerstone of emergency planning. Instead, it was ignored.

Contention 11

The Applicant and the surrounding counties do not possess the experience and technical ability adequately to plan for emergency preparedness, to prepare for a radiological emergency, or the capability for implementing protective measures based upon protective action guides and other criteria as required under NUREG 0654, Rev. 1, at II.J.9.

BASIS FOR CONTENTION 11

The capability to plan and carry out protective measures in the event of a radiological emergency presumes the personnel with experience and training in emergency planning and an understanding of the characteristics of radiological effluents and their potential health effects.

The Applicant and the governments of the surrounding counties lack that capability.

Corporate Emergency Coordinator, Ken Beale, of the Applicant, has training and experience as a Health Physicist. His resume reveals neither training nor experience which would qualify him for his current position and responsibilities. His assistant, Site Emergency Coordinator, is totally lacking in any qualifications for a role in emergency planning or any training beyond a brief practicum on nuclear power generation at an elementary level.

Fairfield County Director of Emergency Preparedness admits that he knows nothing about nuclear power or the health effects of radiation.

Contention 12

The Applicant and the surrounding communities lack Radiological Emergency Response plans which would permit quick and adequate response to an accident involving the transportation of radioactive wastes, especially irradiated fuel assemblies. Without such plans, the health and safety of the general public cannot be reasonably assured. The Applicant should not be granted a license to operate the Summer plant until such plans are developed.

BASIS FOR CONTENTION 12

The counties surrounding the Summer station do not have plans for responding to emergencies involving radioactive materials other than at fixed sites. Operation of the Summer plant would require transshipment of low-level wastes and, perhaps at some future date, irradiated fuel assemblies (FSAR 3.8-1 and 2).

The counties lack the ability to respond to an accident involving such materials. No operating license should be granted the Applicant which could result in the movement of such materials until the affected counties are prepared to deal with potential accidents.

Contention 13

The NRC and the Applicant have failed to comply with the requirement of NUREG 0694 (T.I.D.2.4) that 50 thermoluminescent dosimeters be placed around the site in coordination with the State and the Applicant. The Staff should be required to demonstrate that those TLDs are capable of accurately reading Co^{60} . By themselves, the TLDs are not adequate to providing emergency operations personnel with the information required to competently make the decisions required to reasonably assure the health and safety of the general public under accident conditions. Real-time monitors capable of reading gamma radiation levels should be required at the sites where TLDs are currently planned.

BASIS FOR CONTENTION 13

According to the SER (NUREG 0717) at 22-99, the NRC will only place 40 TLDs.

Under accident conditions, TLDs do not provide information quickly enough to adequately assist appropriate decision-making. Only real-time monitors tied into the Applicant's DAMS system with monitors placed at many locations and not just within 1,000 m. of the plant can provide those necessary inputs.

Contention 14

The Applicant's FSAR fails to address the impacts of steam generator tube denting, cracking, leaking and rupturing on occupational exposure doses to employees required to conduct unusual maintenance or to replace steam generators. These occupational exposures may have been sufficiently understated to adversely affect the Benefit-Cost analysis conducted at the Construction Permit stages of this proceeding.

BASIS FOR CONTENTION 14

The Summer station utilizes 3 Westinghouse Model D3 steam generators. Westinghouse steam generators have demonstrated a generic tendency to denting, cracking, leaking and rupturing. Extensive repairs have been required at a number of plants. At Surry Power Station 1 and at Turkey Point Plant, Units 3 and 4, the effects have been so serious that the steam generators have had to be replaced.

The occupational exposure assumptions set forth in the Summer FSAR (12.1-32) are based on occupational exposure experience from 1969 to 1974. Significant steam generator tube degradation only began to evidence itself in Westinghouse steam generators in 1975. Since that has become a problem at Westinghouse PWRs, the percentage of occupational exposure due to Special Maintenance has increased from 19.0% in 1975 to 35.9% in 1978 (NUREG 0618) at nuclear power plants.

NRC Staff generic estimates of occupational exposure in replacing steam generators suggests man-rem/unit exposures of 3380-5840 (NUREG/CR 0199). Experience at VEPCO's Surry Power Station, Unit 1, claims estimated exposure of 2070 man-rem/unit and an actual exposure rate of 2140 man-rem/unit (NUREG 0692, "FES Related to Steam Generator Repair at

Surry Power Station, Unit 1," p. 4-1). Florida Power and Light Company has estimated occupational exposures of 1730-2480 person-rem/unit for replacing the steam generators at Turkey Point (NUREG 0756, "SER Relating to Steam Generator Repair at Turkey Point Plant, Units 3 and 4," p. 2-6,7).

Adding the assumed \$1,000/ person-rem occupational exposure value to the Cost-Benefit equation is significant but inadequate. Additional costs must also be added to the equation to account for the large numbers of workers who would have to be brought in to carry out such a project, the additional wage costs of short-term employees, the social costs of their presence, and the personal costs of short-term employments which "burn-out" workers by quickly exposing them to quarterly maximum doses.

In a letter of February 6, 1981, analyzing NUREG 0743 discussion of occupational exposure hazards during the replacement of six steam generators at the Turkey Point Plant, Units 3 and 4, Dr. Karl Z. Morgan, Professor of Nuclear Engineering at Georgia Institute of Technology: "I do not believe the VEPCO operation was carried out with only 2140 person rem. I mistrust their data." Further, "The upper dose estimates of 9.4×10^3 person rem for the six generators will cost seven lethal cancers and 14 total cancers by my estimates. This is a mean value between the highest and lowest estimates." (Letter, Karl Z. Morgan to Ms. Joetta Lorion, Floridians United for Safe Energy, Inc., February 6, 1981.)

Contention 15

The quality control of the Summer plant is substantially below NRC standards as evidenced by consistently substandard workmanship, in several aspects, during the construction of the plant.

BASIS FOR CONTENTION 15

Sworn testimony has been entered in courts and before the Public Service Commission of the State of South Carolina regarding substandard workmanship by the prime contractor Daniel International and its employees, particularly in regards to welding and inspections done at the Summer plant.

On August 31, 1979, Clarence Crider, an experienced welder, notified the NRC Atlanta Regional office of substantial substandard welding and inspection practices by his employer Daniel International at the Summer site. Investigation by the NRC revealed that a number of the allegations raised by Crider were true and a number of others remained unresolved (IE Investigation Report No. 50-395/79-35). Investigation of some of the allegations advanced by Crider would have required removing concrete and cement from the core pit liner area to examine welds, which Crider alleges was not done.

In pleadings filed in the Court of Common Pleas of Richland County, South Carolina, Crider alleges that Daniels International and its agents harassed him for complaining about inadequate work, threatened his employment for reporting safety violations, slandered him, and made attempts to murder him in order to silence his complaints about shoddy workmanship.

Numerous examples of Non-Conformance Reports evidencing shoddy work-

manship in several aspects were entered into the record before the South Carolina Public Service Commission. Those NCRs reveal patterns of sub-standard workmanship which were uncorrected by either the Applicant or its agent Daniel International. Concrete pours which did not meet specifications were left in place. Month after month, arc weld strikes were noted and formulaic "corrective action" supposedly taken to correct the errors. Unqualified welders time and again were assigned to safety-related welds. Large numbers of failures by Quality Control personnel were later caught.

Conversations with employees of the Quality Control staff of Daniel International suggest that a review of QC resumes would show that shortages of QC inspectors led to the employment of individuals who lacked the practical experience to examine welds and other craft skill products. Further, over-long work weeks seriously undermined the efficiency and attentiveness of QC staff.

Contention 16

The Applicant has failed to demonstrate that the diesel generators which are critical to the safe shutdown and control of the reactor in the event of loss of off-site power are designed, constructed and operated at standards sufficiently high that they may be relied upon to reasonably assure the health and safety of the general public.

BASIS FOR CONTENTION 16

The Summer station employs two 12 cylinder, diesel engine generators as their source of emergency a-c power in the event of loss of off-site power. The FSAR cites the Joseph W. Farley Units 1 and 2 as having significant similarities to the Summer diesel generators (Table 1.3-1).

Diesel generator liability has been a long-standing concern. An examination of LERs from 1969 to September 28, 1977 produced 610 failures and/or troubles. (NUREG/CR 0660, "Enhancement of On-Site Emergency Diesel Generator Reliability"). More recently, a study of LERs from 1976-1978 produced 298 cases failure to start or failure to continue to run (NUREG/CR 1362, "Data Summaries of Licensee Event Reports of Diesel Generators at U.S. Commercial Nuclear Power Plants. January 1, 1976-December 31, 1978," p. 18).

NUREG/CR 1362 found that 32% of the cases of failure to start came from 4 plants, including the Farley 1 unit described as significantly similar to the Summer set up.

A further examination of LERs for the past year shows numerous diesel generator failures at the Farley station. On July 17, 1980, both diesels 1C and 2C were inoperable at Farley 1.

Contention 17

The "Draft Environmental Statement Related to the Operation of the Virgil C. Summer Nuclear Station, Unit 1, Supplement" (NUREG 0534, Supplement) grossly understates the probabilities of a severe Class 9 accident and the consequent impact of the operation of the Summer plant on the environment.

BASIS FOR CONTENTION 17

The Draft ES for the Summer Plant is the first to address the impacts of an accident greater than design basis on the environment. In attempting that, the Draft ES employs a probabilistic analysis which is in essence the same as that employed in the Reactor Safety Study (WASH 1400). The Draft ES differs from the RSS in employing site specific data inputs to the RSS consequences model and in not using the smoothing technique that associated the 10 percent from each side of the release categories.

Such serious issues have been raised and shown regarding the conceptual, methodological, statistical, and data underpinnings of the RSS that its use in licensing proceedings as a basis for decision-making is entirely inappropriate (See Statement of the NRC, January 19, 1979; NUREG/CRO400, "Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission, H.W. Lewis, Chairman," pp. vii-xi, and passim; Union of Concerned Scientists, "The Risks of Nuclear Power Reactors: A Review of the NRC Reactor Safety Study WASH-1400 (NUREG-75/014)," pp. 113-130).

The Lewis Committee notes in a recommendation endorsed by the Commission, "The consequence model used in WASH-1400 should be substantially improved, and its sensitivities explored, before it is used in the

regulatory process" (p. xi). Although two improvements in the methodology have been made in the Draft ES, those improvements do not overcome the other flaws in the WASH-1400 study and the probabilistic estimates upon which the conclusions are based are of no probative value.

Contention 18

The Applicant and Staff have failed to demonstrate that the risk from an ATWS event is sufficiently reduced by interim measures prior to resolution of generic issues and Commission direction on corrective actions provides reasonable assurance that the Summer station can be operated prior to that resolution without endangering the health and safety of the public.

BASIS FOR CONTENTION 18

NUREG 0460 ("Anticipated Transients Without Scram for Light Water Reactors") set forth the Staff position that "the reliability of current scram systems cannot be shown to be adequate to meet the safety objective considering the rate at which these systems are challenged by anticipated transients" (p. 39). The Staff position articulated in 1973, (NUREG 1270) was that the likelihood of an ATWS event was acceptably small given existing conditions, including the small numbers of reactors operating in 1973. Since that time, the number of reactors has increased dramatically.

It is simply irrational and inconsistent to argue, at once, that there is a problem of sufficiently high risk that changes ought to be made and that those changes can be made down the road somewhere. Probabilistic arguments that an event is likely to occur only once in x many reactor years do not make it any less likely that at y plant that event will occur this year.

Contention 20

The Applicant lacks adequate on-site storage facilities for irradiated fuel assemblies which would be produced during the design life of the Summer plant. The Applicant has failed to demonstrate that other storage and/or reprocessing facilities are or will be available to the Applicant at such time as current on-site spent fuel facilities are filled.

BASIS FOR CONTENTION 20

The spent fuel pool at the Summer station is designed to hold 13/3 core of irradiated fuel assemblies, approximately 10 years capacity (FSAR 9.1-2,3.) In planning for the spent fuel pools, the Applicant assumed availability of other storage and/or reprocessing facilities by 1985 (FSAR 3.8-2). Such an assumption is no longer tenable.

The most likely commercial reprocessing facility, Allied General Nuclear Services, studies suggest that reprocessing would not be available until 1990, at the earliest ("Scoping Studies of the . . . Disposing of the TMI-2 Spent Fuel Core," AGNS 35900-1.5-79, September 1980). Recent political decisions suggest that that schedule is too optimistic.

There is little evidence of a Federal commitment to temporary or interim storage of irradiated fuel and "permanent" disposal appears to be decades off.

Contention 21

The building of additional on-site irradiated fuel assembly storage facilities which would store spent fuel for an indefinite period constitutes an unwarranted hazard to the safety and health of the residents of the area surrounding the station. Environmental effects of such a move should be addressed before granting of the operating license, since the need to construct such facilities may reasonably be anticipated at this time. The environmental impacts of such long-term additional storage facilities would adversely affect the positive Cost-Benefit analysis constructed at the construction permit phases of this proceeding.

BASIS FOR CONTENTION 21

Since no other storage facilities may reasonably be expected to be available to the Applicant for storage of spent fuel when current pool space is filled, then long-term additional pools will have to be constructed. In an area of uncertain seismicity, that constitutes reckless action.

Contention 22

The transshipment of irradiated fuel assemblies on the roads and highways of the plant vicinity would constitute an unwarranted hazard to the health and safety of the residents of that region. The Applicant has failed adequately to demonstrate the acceptability of the environmental impacts of such transshipments.

BASIS FOR CONTENTION 22

Applicant proposes to ship by truck between 17 and 52 shipments of irradiated fuel each year, 73,000 pounds of highly radioactive material (FSAR 3.8).

Serious questions have been raised about the adequacy of spent fuel casks in accident conditions. The wreckage of a truck carrying such spent fuel on one of these country roads could result in the release of significant quantities of radionuclides to the environment.

Contention 23

The following effects on a long-term basis have been sufficiently underestimated by the Applicant and the Staff so as to compromise the validity of the favorable Benefit-Cost balance struck at the construction phase of this proceeding.

a) The somatic and genetic effects of radiation releases during normal operation, to restricted and unrestricted areas, said releases being within the guidelines and/or requirements of 10 CFR Part 20, and Appendix 1 to 10 CFR Part 50.

b) The health effects of the uranium fuel cycle, given the release values of the existing Table S-3 of 10 CFR Part 51.

BASIS FOR CONTENTION 23

The somatic and genetic effects of normal operation have been seriously underestimated by the Staff and Applicant who have relied about estimates of health effects of low-level ionizing radiation which are too optimistic. Dr. Karl Z. Morgan of Georgia Tech and other have attacked the BEIR III report, for example, for seriously underestimating health effects.

Moreover, the studies of radionuclide uptake by plants carried out by Bernd Franke and others of the University of Heidelberg cast serious doubt on the validity of NRC food chain calculations.

Contention 24

The potential impacts of systems interactions and particularly the safety implications of control systems and plant dynamics have not been sufficiently accounted for by Staff and the Applicant in their safety reviews and conclusions that the safety and health of the general public can be reasonably assured during the operation of the Summer station.

BASIS FOR CONTENTION 24

Demetrios L. Basdekis of the NRC Staff has, in a number of memoranda and appearances, addressed the inadequacy of current understanding of the safety implications of control systems and plant dynamics. Those concerns should be addressed with specific reference to this plant.

In the ACRS study of LERs (NUREG 0572, "Review of Licensee Event Reports"), the ACRS found a number of systems interactions which only were revealed by their actually occurring. Significantly, all three of the examples given were of reactors of equivalent design to the Summer reactor (Westinghouse 17 x 17).

Contention 25

The control room design of the Summer plant fails to take adequate note of human factors.

BASIS FOR CONTENTION 25

Comparison of the Summer station control room with the guidelines of NUREG/CR 1580 Draft reveals a number of deficiencies which could lead to confusions and errors resulting in danger to the health and safety of the general public and on-site personnel.

Although some attempts have been made to analyse and address these serious deficiencies, the report prepared for the Applicant by the Essex consulting group recommends leaving a number of significant problem areas for later correction in order to avoid delay.

All required changes should be made before initial fuel loading.

Contention 26

The hydrogen control measures in the reactor containment building are inadequate to deal with hydrogen production during an accident. Pressures resulting from a hydrogen explosion or hydrogen deflagration could threaten the structural integrity of the containment. Purging of the containment to release some of that pressure would release unacceptable levels of radionuclides to the environment. Applicant should be required to install a filtered, vented containment system.

BASIS FOR CONTENTION 26

The accident at TMI demonstrated the very real dangers of hydrogen production during the course of any accident in which the core is uncovered. The combination of increased pressures from the steam, pressures from hydrogen deflagration, and a hydrogen explosion could exceed the design basis 59 psi of the containment.

If that pressure is to be relieved by purging, a filtered, vented containment system should be in place to reduce the adverse health effects from venting of highly radioactive containment atmosphere to the environment.

Contention 27

The Applicant lacks the technical and management resources to fulfill the post-TMI requirements set forth in NUREG 0660, NUREG 0694, and NUREG 0737.

BASIS FOR CONTENTION 27

The Applicant is a small utility, new to the nuclear field. Its management lacks experience in nuclear operations and its operators do not have sufficient "hands on" experience to safely run a plant.

The new requirements of post-TMI regulation have raised the skill and resources level required for operation of a nuclear facility beyond the abilities of the Applicant.

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, Robert A. Hollins, who, being duly sworn,
says:

1. That he lives at Rt. 1, Box 86, Jenkinsville, South Carolina, on Highway 215, together with his wife, one minor child, one adult step-daughter, 2 minor step-grandchildren, and an infant step-grandchild who is kept days, at a distance of about 2 miles from the Virgil C. Summer Nuclear Station, Unit 1, on the edge of the Monticello Reservoir, cooling lake for that facility.
2. That he owns the premise in which he resides and he is retired from the insurance business after serving a partial-term as Treasurer of Fairfield County.
3. That he and his family live, work, and engage in outdoor recreational activities throughout Fairfield County, South Carolina, including areas in the immediate vicinity of the Virgil C. Summer Nuclear Station, Unit 1. He and his family hunt rabbits and squirrels in that vicinity and consume the meat from that game. He fishes in the Monticello Reservoir and he and his family consume those fish. He and his family grow vege-

116. T.A.H.

tables and consume produce from a garden on his land, near the Monticello Reservoir.

4. That he and his family are residential electric customers of South Carolina Electric & Gas Company.

5. That he is a member, incorporator, and on the Board of Directors of Fairfield United Action and he has been active in the organization since about March of 1980. That through participation in the programs of the organization, he has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

6. That he is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to the health, safety, and economic interest of himself and his family.

7. That he is further informed and believes that his interest in this matter can only be protected through participation in this operating license proceeding, and that his interest will not be adequately protected by any of the present parties to the proceeding. He authorizes Fairfield United Action, or its representative, to protect the interest of

himself and his family in this matter through participation in this proceeding.

Robert A. Hollins
Robert A. Hollins

SWORN to and subscribed
before me this 22nd day of
March 1980.

Walter B. Thomas (L.S.)
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: December 1 1990

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1.),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, Helen A. Barefoot, who, being duly sworn, says:

1. That she resides at Rt. 3, Box 76-B, Winnsboro, South Carolina, on Highway 269 in Fairfield County, South Carolina, at a distance of approximately 9½ miles from the Virgil C. Summer Nuclear Station, Unit 1. She has lived in that home for 2 years and in the immediate area for 3 years.
2. That she owns the above premise and 2 acres of land and she is an employee of the State of South Carolina.
3. That she lives, works in and engages in outdoor recreational activities, including walking, throughout Fairfield County, South Carolina, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1. She grows vegetables and consumes produce grown in a garden near her home and within ten miles of the Virgil C. Summer Nuclear Station, Unit. 1.
4. That she owns 10 shares of South Carolina Electric & Gas Company Common Stock.

5. That she is a residential electric customer of South Carolina Electric & Gas Company.
6. That she is a member of Fairfield United Action and has been active in the organization since about April 1980. That through her participation in the programs of the organization she has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the V.C. Summer Nuclear Station, Unit 1.
7. That she is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to her health, safety and economic interest.
8. That she is further informed that her interest in this matter can only be protected through participation in this operating license proceeding, and that this interest will not be adequately represented by any of the present parties to the proceeding. She authorizes Fairfield United Action, or its representative, to protect her interest in this matter through participation in this proceeding.

Helen A. Barefoot
Helen A. Barefoot

SWORN to and subscribed
before me this ___ day of
March 1981.

L. F. Remy (L.S.)
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires:

the design, construction, and plans for the operation of the Virgil C. Summer Nuclear Station, Unit 1.

4. That he lives, works, and engages in outdoor recreational activities, including walking and bicycling, throughout Fairfield County, South Carolina, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1.

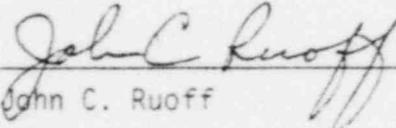
5. That he is a residential electric customer of South Carolina Electric & Gas Company.

6. That he is a member of Fairfield United Action and has been active in the organization since about March 1980. That through his participation in the programs of the organization he has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

7. That he is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to his health, safety, and economic interest.

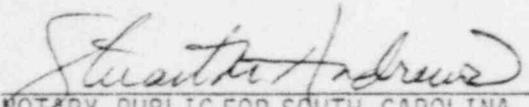
8. That he is further informed and believes that his interest in this matter can only be protected through participation in this operating

license proceeding. He authorizes Fairfield United Action, or its representative, to protect his interest.



John C. Ruoff

AFFIRMED and subscribed to
before me this 2nd day of
March 1980.

 (L.S.)
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: June 1987

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, Margie G. Moore, who, being duly sworn,
says:

1. That she lives at Rt. 3, Box 132, Jenkinsville, South Carolina, on Highway 215, south of Jenkinsville, South Carolina, together with her mother, her uncle, two minor children and a minor first cousin, at a distance of approximately 7 miles from the Virgil C. Summer Nuclear Station.
2. That her family owns the premise in which she resides and 38 acres of land and that her principal employment and source of income is as the Home-base Coordinator for Head Start for Midlands Human Resources Development Commission.
3. That she and her family live, work, and engage in outdoor recreational activities throughout Fairfield County, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1.
4. That she and her family are residential electric customers of South Carolina Electric & Gas Company.

Margie G. Moore
2/1/76

5. That she is a member, incorporator, and Secretary of the Board of Directors of Fairfield United Action and has been active in the organization since about March 1980. That through her participation in the programs of the organization, she has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

6. That she is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to the health, safety and economic interest of her and her family.

7. That she is further informed and believes that her interest in this matter can only be protected through participation in the operating license proceeding, and that her interest is not adequately represented by any of the present parties. She authorizes Fairfield United Action, or its representative, to protect the interest of herself and her family in this matter through participation in this proceeding.


Margie G. Moore

SWORN to and subscribed
before me this 22nd day of
March 1980.


NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: December, 1990

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)
In the Matter of)
SOUTH CAROLINA ELECTRIC & GAS COMPANY,)
ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANT)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, James M. "Bubba" Lyles, III, who, being duly sworn, says:

1. That he resides at 202 Carlisle Street, Winnsboro, South Carolina, with his wife and three minor children, at a distance of approximately 15 miles from the Virgil C. Summer Nuclear Station, Unit 1. He was born and has lived in or near Winnsboro, South Carolina, since his birth 35 years ago.
2. That he owns the above premise where he resides and is part-owner and Vice-President of Winnsboro Builders Supply, Inc., S. Vanderhorst Street, Winnsboro, South Carolina, a wholesale and retail business selling hardware and building supplies, which business is his principal employment and source of income.
3. That he and his family live, work and engage in outdoor recreational activities throughout Fairfield County, South Carolina, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1. He and his family grow vegetables and consume produce grown in a garden at Winnsboro, South Carolina.

4. That he and his family are residential electric customers of the Town of Winnsboro.

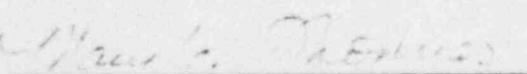
5. That he is a member of Fairfield United Action and has been active in the organization since about September 1980. That through his participation in the programs of the organization he has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

6. That he is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct harm to the health, safety, and economic interest of himself and his family.

7. That he is further informed and believes that his interest in this matter can only be protected through participation in this operating license proceeding, and that his interest will not be adequately represented by any of the present parties to the proceeding. He authorizes Fairfield United Action, or its representative, to protect the interest of himself and his family in this matter through participation in this proceeding.


James M. "Bubba" Lyles, III

SWORN to and subscribed
before me this 22nd day of
March 1980.

 (L.S.)
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: December 1, 1990

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, Janet H. Greenhut, M.D., who, being duly sworn, says:

1. That she resides at 209 W. High Street, Winnsboro, South Carolina, together with her husband, at a distance of approximately 14 miles from the Virgil C. Summer Nuclear Station, Unit 1. She has lived in Winnsboro, South Carolina, since April 1980.
2. That she owns the above premise where she resides.
3. That she holds a Doctor of Medicine degree from Wayne State University in Detroit, Michigan, and has practiced community-based medicine in Fairfield County, and has educated herself about the health effects of radiation exposure.
4. That she and her husband live, work, and engage in outdoor recreational activities throughout Fairfield County, South Carolina, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1. She and her husband grow vegetables and consume produce grown in a garden at their residence.

Handwritten signature/initials

5. That she and her husband are residential electric customers of the Town of Winnsboro.
6. That she is a member of Fairfield United Action and has been active in the organization since about October 1980. That through her participation in the programs of the organization she has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.
7. That she is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to the health, safety, and economic interest of her and her husband.
8. That she is further informed that her interest in this matter can only be protected through participation in this operating license proceeding, and that her interest will not be adequately represented by any of the present parties to the proceeding. She authorizes Fairfield United Action, or its representative, to protect her interest in this matter through participation in this proceeding.

Janet H. Greenhut

Janet H. Greenhut, M.D.

SWORN to and subscribed
before me this 22nd day of
March 1980.

W. H. Thomas (L.S.)
NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: December 6, 1980

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
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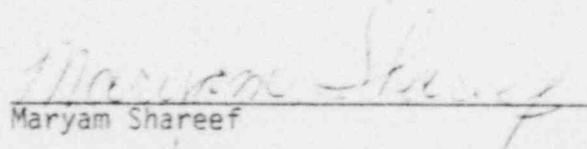
PERSONALLY APPEARED before me, Maryam Shareef, who does affirm and says:

1. That she resides at Rt. 3, Box 99, Winnsboro, South Carolina, on Road 48 in Fairfield County, South Carolina, together with her mother and seven minor children, at a distance of approximately 8 miles from the Virgil C. Summer Nuclear Station, Unit 1. She has lived at this residence for about 5 years.
2. That she lives on family land of about 90 acres held in her mother's name and she is employed by the State of South Carolina.
3. That she and her family live, work, and engage in outdoor recreational activities throughout Fairfield County, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1. She and her family grow vegetables for personal use and for sale to others and consume produce grown on their land. She and her family keep approximately twelve chickens and consume eggs from those chickens. She and her family keep 11 milk cows and both consume some milk from those cows and eat meat from animals slaughtered from that herd. She and her family keep a horse.
4. That she and her family are residential electric customers of the Fairfield Electric Cooperative.

5. That she is a member and on the Board of Directors of Fairfield United Action, Secretary of Greenbrier United Action, and has been active in the organization since about April 1980. That through her participation in the programs of the organization she has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

6. That she is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to the health, safety and economic interest of herself and her family.

7. That she is further informed that her interest in this matter can only be protected through participation in this operating license proceeding, and that her interest will not be adequately represented by any of the present parties to the proceeding. She authorizes Fairfield United Action, or its representative, to protect the interest of herself and her family in this matter through participation in this proceeding.


Maryam Shareef

AFFIRMED and subscribed
to before me this 22 day of
March 1980.


NOTARY PUBLIC FOR SOUTH CAROLINA (L.S.)
My commission expires:

UNITED STATES OF AMERICA
BEFORE THE NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
PETITIONER)

In the Matter of)

SOUTH CAROLINA ELECTRIC & GAS)
COMPANY, ET AL.)
(VIRGIL C. SUMMER NUCLEAR STATION,)
UNIT 1),)
APPLICANTS)

A F F A D A V I T

DOCKET NOS. 50-395 OL
and
50-395 A

PERSONALLY APPEARED before me, Cora P. Jackson, who, being duly sworn,
says:

1. That she resides at Rt. 2, Box 16, Blair, South Carolina, on Road 99, together with her husband, 2 minor children, an adult daughter, and two minor children kept during the days, at a distance of approximately 9½ miles from the Virgil C. Summer Nuclear Station, Unit 1.
2. That she owns the above premise in which she resides and two acres of land on which it stands together with a store which she owns, which business sells general merchandise, primarily food items, to local community members. Her principal employment is as a nurse's aid in a convalescent center in Newberry, Newberry County, South Carolina, approximately 24 miles from the Virgil C. Summer Nuclear Station, Unit 1.
3. That she and her family live, work, and engage in outdoor recreational activities throughout Fairfield County, including areas in close proximity to the Virgil C. Summer Nuclear Station, Unit 1. She and her family grow vegetables and consume produce grown in a garden at her residence.

4. That she and her family are residential electric customers of Newberry Electric Cooperative.

5. That she is a member and member of the Board of Directors of Fairfield United Action and Co-chairperson of Blair United Action and has been active in the organization since about April of 1980. That through participation in the programs of the organization she has become educated on the subject of the design and operation of nuclear power plants and the probable effects of the operation of the Virgil C. Summer Nuclear Station, Unit 1.

6. That she is informed and believes that the grant of an operating license to South Carolina Electric & Gas Company and the operation of this facility will result in direct physical harm to the health, safety and economic interest of her and her family.

7. That she is further informed and believes that her interest in this matter can only be protected through participation in this operating licensing proceeding, and that her interests will not be adequately represented by any of the present parties to the proceeding. She authorizes Fairfield United Action, or its representative, to protect the interest of herself and her family in this matter by participating in this proceeding.


Cora P. Jackson

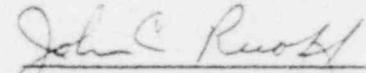
SWORN to and subscribed
before me this 22nd day of
March 1980.


NOTARY PUBLIC FOR SOUTH CAROLINA
My commission expires: December 1, 1990

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND)

VERIFICATION

Before me personally appeared John C. Ruoff, who does affirm and says that he is the authorized representative of Fairfield United Action; that he has been duly authorized to be the official representative of the above-named petitioner in this proceeding; that in his capacity he has knowledge of the facts and matters herein contained; that he has read the foregoing Petition to Intervene and Request for Hearings and Supplement and that to the best of his knowledge and belief, the matters stated herein are true and correct.



John C. Ruoff

AFFIRMED and subscribed
before me on this 23 day of
March 1981.



NOTARY PUBLIC FOR SOUTH CAROLINA
My Commission Expires 11-17-90

NOTICE FOR SERVICE UPON PETITIONER

Notice is hereby given that pursuant to §2.708 of the Rules of Practice, service upon the aforesaid petitioner should be made upon the undersigned John C. Ruoff at the following address:

John C. Ruoff
P.O. Box 96
Jenkinsville, SC 29065

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Ex Parte: FAIRFIELD UNITED ACTION,)
) Petitioner,)
))
In the Matter of:) Docket Nos.
))
) 50-395 OL
SOUTH CAROLINA ELECTRIC AND GAS) and
COMPANY, ET AL.) 50-395 A
(Virgil C. Summer Nuclear Station,)
Unit 1),)
) Applicants.)
_____)

AFFIDAVIT OF SERVICE

PERSONALLY appeared before me, John C. Ruoff, who duly affirmed that copies of "Petition to Intervene and Request for Hearing" and "Supplement" in the above-captioned matter were served upon the following persons by deposit in the United States mail, first class postage prepaid, this 23rd day of March 1981.

Herbert Grossman, Esq.
Chairperson, Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Frank F. Hooper
School of Natural Resources
University of Michigan
Ann Arbor, MI 48109

Mr. Gustave A. Linenberger
Member, Atomic Safety and Licensing
Board Panel
Washington, DC 20555

Chairperson, Atomic Safety and
Licensing Appeal Board Panel
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Chase R. Stevens
Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Chairperson, Atomic Safety and
Licensing Board Panel
U.S. Nuclear Regulatory Commission
Washington, DC 20555

George Fischer
Vice-President & General Counsel
South Carolina Electric & Gas Company
P.O. Box 764
Columbia, SC 29202

Steven C. Goldberg, Esq.
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Brett Allen Bursey
Route 1, Box 93-C
Little Mountain, SC 29075

Joseph B. Knotts, Jr.
Debevoise & Liberman
1200 17th Street, N.W.
Washington, DC 20036

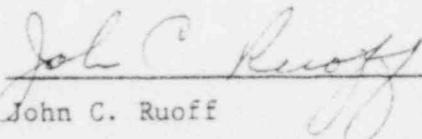
Samuel J. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Charles McGlothlin, Esq.
General Counsel
South Carolina Public Service
Authority
P.O. Box 398
Moncks Corner, SC 29461

C. Pinckney Roberts, Esq.
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Columbia, SC 29201

Richard P. Wilson, Esq.
Assistant Attorney General
South Carolina Attorney General's
Office
P.O. Box 11549
Columbia, SC 29211

Leonard Bickwit, Esq.
General Counsel
U.S. Nuclear Regulatory Commission



John C. Ruoff

AFFIRMED and subscribed
before me this 23 day of
March 1981.



NOTARY PUBLIC FOR SOUTH CAROLINA
My Commission Expires 11-17-95