

UNITED STATES OF AMERICA  
before the  
NUCLEAR REGULATORY COMMISSION

Ex Parte: )  
Environmentalists, Inc. )  
 )  
Petitioner, )  
 )  
In the Matter of )  
 )  
Dismantlement and Decommissioning )  
of Yankee Rowe Nuclear Power Plant )  
\_\_\_\_\_ )

SUPPLEMENT 17 75 45  
to  
PETITION  
for  
ADJUDICATORY HEARING  
and for  
LEAVE TO INTERVENE

SUPPLEMENTAL INFORMATION  
RELATED TO ENVIRONMENTALISTS, INC.

1. In the 1970's, Environmentalists, Inc. (E. I.) was granted non-profit 501(c)(3) status by the U. S. Internal Revenue Service. Its office is at 1339 Sinkler Road in Columbia, S. C. (29206). Although a majority of those belonging to E. I. are South Carolina citizens, the organization has out-of-state members as well. Several members live near rail routes which are being used to transport the dismantlement waste from the Yankee Rowe reactor, while others own property and live in the vicinity of the Massachusetts power plant or live close to the Barnwell radioactive waste disposal facility.

2. The Petitioner and its members are being endangered by dismantlement of the Yankee Rowe Nuclear Power Station, and by such related activities as the transportation and burial of the dismantlement wastes. Among those being adversely affected are:

Robert A. Jeffcoat  
2773 Rosewood Drive  
Columbia, S. C. 29205

G. L. Locklear  
129 Organic Lane  
West Columbia, S. C. 29169

Terry Collins  
Route 1 Box 62A  
Olar, S. C. 29843

J. S. McMillan  
Box 522  
Allendale, S. C. 29810

Robert Jeffcoat and G. L. Locklear live close to trucking routes which have been used for transporting nuclear materials. They frequently drive on

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the state's highways, including those over which radioactive waste shipments travel and those roads that are in the vicinity of the Barnwell facility for the burial of nuclear waste.

Terry Collins lives fifteen miles from the Barnwell facility and travels on roads leading to and close to this radioactive waste landfill.

J. S. McMillan lives approximately ten miles from the Barnwell nuclear waste disposal facility. His property covers 2,000 acres. The crops which he grows include produce, primarily melons, wheat and rye. Much of this food is sold out-of-state. Local residents and others living in the state purchase and eat produce from the McMillan farm.

3. The Petitioner has been engaged in research related to nuclear facilities and radioactive waste projects for more than twenty years. Its participation in state and federal proceedings has further increased the Petitioner's ability to help in guaranteeing that decisions related to the decommissioning of the Yankee Rowe reactor are based on as complete and accurate a record of evidence as possible.

4. The Nuclear Regulatory Commission (NRC) granted the Petitioner full party status at three of its proceedings (Docket Nos. 50-332 NEPA, 50-332 O.P., 70-1729). For more information regarding these hearings, see Attachment # 1, entitled Regulatory and Legal Events Affecting the Barnwell Nuclear Fuel Plant, BNFP

5. At the BNFP proceeding, Dr. Karl Z. Morgan and Dr. John W. Gofman, both nationally known for their work in the health physics field, appeared as witnesses for the Petitioner. In addition to presenting testimony on the health effects associated with activities involving nuclear materials, the Petitioner brought out much evidence regarding transportation of radioactive materials and routine and accidental release of radioactively contaminated liquids, gases and particulate matter.

6. Study of waste management proposals has been and continues to be major research project of the Petitioner, including those related to what is called

"low-level radioactive waste". In 1982, the Barnwell "low-level radioactive waste" facility was the subject of a state license transfer hearing. As a full party to the proceeding, the Petitioner helped to uncover evidence about the site deficiencies, about problems with burial practices and about WML's lack of knowledge and experience in operating a nuclear waste disposal facility.

7. On more than fifteen occasions, the Petitioner has presented comments and testimony related to nuclear waste management plans, including those concerned with decommissioning (Decommissioning of the Shippingport Atomic Power Station, May 1982 DOE-EIS-0080 \* and Disposal of Decommissioned, Defueled Naval Submarine Reactor Plants, May 1984, EIS-U.S. Department of the Navy).

8. The Petitioner's research, its participation in National Environmental Policy Act (NEPA) proceedings/meetings as well as licensing hearings on both a state and federal level have all contributed to the organization's being qualified to represent its members and their neighbors regarding the proposal to dismantle the Yankee Rowe Nuclear Power Station. Based on its knowledge and experience, the Petitioner has identified the following areas of concern related to the dismantlement alternative continuing to be implemented:

a. Radioactively contaminated particulate matter is released when cutting, chipping, spalling and blasting operation take place during dismantlement. To guard against radioactive material being inhaled or ingested a number of protective measures are employed (i.e. use of contamination control envelopes equipped with HEPA filters, monitoring of gaseous effluents at release points, providing buildings with HEPA filters and supplying workers with dosimeters, breathing masks and equipment, hand and shoe counters, protective clothing and training in the use of these decontamination and contamination control methods.

These precautions have been taken at commercial and government plants yet release of radioactive pollution has happened due to accidents, human error

equipment failures and design miscalculations. For example, filters have been blown out causing release of radioactive pollution, contamination (Pu-238) and other very dangerous materials have not been detected on workers shoes and been spread by them to out-side communities, particulate matters and gases have been discharged to the air, contract help have experienced internal contamination, etc.

b. Members of the public do not have equipment to protect themselves from escaping radioactive gases or particulate matter, nor the detection devices to let them know when they have been exposed to radiation sources, nor the training/education to recognize the dangers associated with each. Members of the public usually will have no way of knowing that they have taken radioactively contaminated particulate matter into their bodies. This may also be true of some emergency workers. During a truck or train accident involving radioactive waste shipments, there may not be adequate equipment available, or those present may not be capable handling a serious accident. For example, the spread of fire complicates an emergency situation, or a large crowd of observers, or a rail accident where people living in the neighborhood are blocked in by the train and can not be evacuated, or a bridge collapses, etc.

c. Monitoring doesn't guarantee detection and does not guarantee protection of air, and water. According to geologists with the U. S. Department of the Interior, it is possible for migrating radionuclides to bypass monitoring wells and contaminate drinking water sources. Where air monitors are concerned, the possibility of detecting accidental releases of radioactive pollution is much more unlikely than when monitoring water.

d. The Barnwell radioactive waste facility is close to the Savannah River Site, a complex of nuclear plants, where routine and accidental releases to the area have been taking place for over forty years. Since the effects of radiation exposure are cumulative, the people of Barnwell and surrounding counties are at

special risk from nuclear wastes proposed to be transported to South Carolina and buried at the Barnwell nuclear landfill.

e. The risks associated with exposure to radiation are known. For example, the effects are cumulative, small children and babies experience more of a detrimental health impact than a grown person, and radiation damages both a person's health and, by impairing his/her reproductive cells, harms future generations.

f. Such long-lived radioactive isotopes as Ni-59 and Nb-94 are produced at nuclear power plants and are present in dismantlement wastes. (Radionuclide Characterization of Reactor Decommissioning Waste and Spent Fuel Assembly Hardware, NUREG-CR-5343, 1988).

g. The problems associated with poorly maintained railroad tracks and rail bridges increase the risk of serious accidents happening and increase the risk that such accidents would release radioactive materials.

h. Radioactive shipments may be in a rail yard for as long as six to eight hours, thus being a radiation exposure source to train personnel and/or anyone close to the rail yard. The shielding provided may not be adequate for the high levels of radiation doses which are possible from such dismantlement waste parts as the pressure vessel. According to the Shippingport report (DOE/EIS-0080F) up to 24 rem/hr are given off by the pressure vessel. "At 24 rem/hr, a 10 hour exposure would be lethal to approximately 50% of those exposed." (page 2-3)

i. Releases and accidents when shipments are taken by truck endanger those who travel on highways. These persons can be harmed by either leaking gaseous or particulate matter or by radiation penetrating through a container. A truck disabled by a crash or due to a problem (such as a flat tire, overheated engine, etc.) which would keep the radioactive materials at the same location at a time when radioactive releases may be taking place.

j. The site of the Barnwell Nuclear waste facility is unsuitable for the burial of radioactive materials due to the shallow water table, moist climate and

proximity of the Savannah River complex of nuclear facilities. In 1966, these deficiencies were identified by earth scientists with the National Academy of Sciences (NAS). The NAS findings were confirmed by a 1982 study of the U. S. Geological Survey which reported that Co-60 and tritium had already leaked from disposal pits and tritium was also being released to the air. In this area, there is a risk of earthquakes, a subject which was taken up at the BNFP hearing.

#### CONCLUSION

The NRC has violated the National Environmental Policy Act (NEPA) by allowing the decommissioning alternative Dismantlement to begin at the Yankee Rowe reactor without first preparing and circulating an Environmental Impact Statement. (The Generic Environmental Impact Statement on Decommissioning, NUREG-0586, 1988 doesn't specifically address the Yankee Rowe Nuclear Power Station.) and without providing an opportunity for the holding of an adjudicatory proceeding on the matter.

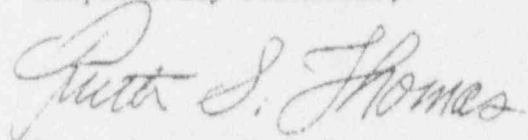
There are and there will continue to be significant environmental and health consequences as a result of the NRC's failure to comply with NEPA since Immediate Dismantlement is the decommissioning alternative which causes the greatest detrimental health impact, produces the largest volume of radioactive waste and requires the most shipments of waste.\* (page vii) (Also see a through j under No. 8)

WHEREFORE, THE PETITIONER PRAYS that all dismantlement activities related to the Yankee Rowe reactor be halted, including the shipment of dismantlement wastes to the Barnwell radioactive waste disposal facility.

PETITIONER FURTHER PRAYS that a detailed Environmental Impact Statement be prepared and circulated for comment and consideration in decision-making concerned with selecting the decommissioning alternative for the Yankee Rowe reactor which would be the least detrimental in terms of its effect on public health and the environment and that public notices be prepared and circulated which state there is

is an opportunity for affected persons and organizations to take part in an adjudicatory hearing related to decommissioning of the Yankee Rowe reactor.

Respectfully submitted,



Ruth Thomas, President

cc/ Ann P. Hodgdon, Esq.  
Office of the Secretary (FAX)  
Office of Commission  
Appellate Adjudication  
Thomas Digman, Esq.  
Dr. Andrew C. Kadak  
Heyward G. Shealy, DHEC

Dated at Columbia, South Carolina  
this 16th day of December 1993

REGULATORY AND LEGAL EVENTS AFFECTING  
THE BARNWELL NUCLEAR FUEL PLANT (BNFP)

1. In the late 1960's Allied General Nuclear Services (AGNS)--then called Allied Gulf--applied to the Atomic Energy Commission (AEC) for a construction license for the BNFP, to be built (on land purchased from the Savannah River Plant) for the purpose of reprocessing spent nuclear fuel. When completed the plant was to consist of five facilities:
  - 1) The Fuel Receiving and Storage Station
  - 2) The Separations Facility
  - 3) The Uranium Hexafluoride Facility
  - 4) The Plutonium Product Facility - Not yet built
  - 5) The Waste Solidification Facility " " "
2. In 1970 public hearings were held in Barnwell by the Hearing Board of the AEC. These hearings consisted of statements submitted by interested parties--the applicant AGNS, and members of the public. The State of South Carolina raised no questions. No testimony was submitted under oath and there was no cross examination of witnesses.
3. Later in 1970 a license for construction was awarded by the AEC.
4. In 1971 Governor West appointed a Legislative Study Committee to investigate AGNS' plans and look into the possible effects such a plant would have on the health, safety, economy, etc. of South Carolina.
5. In 1971 the U. S. Supreme Court ruled (Calvert Cliffs decision) that licensing procedures for Nuclear plants must be in compliance with the National Environmental Policy Act (NEPA) of 1969.
6. In 1971 the AEC declared the 1970 BNFP construction license invalid under NEPA and served notice that a reconsideration of the license was necessary.
7. In a 1972 decision, the U. S. Supreme Court ruled against the State of Minnesota which by state legislation had sought to impose stricter controls on radiation than those imposed by the AEC. (Thirteen other states had filed briefs supporting the Minnesota position.)

This decision had the effect of establishing the limited role of state legislatures in setting radiation standards.
8. In December 1973 a petition for hearings on construction licensing of the BNFP was filed by a public interest group, Environmentalists, Inc.; and in May 1974 E.I. qualified as a party to the proceedings on behalf of itself and two other South Carolina organizations--Piedmont Organic Movement and S.C. Environmental Action, Inc. of Hilton Head.

The State of South Carolina did not file notice of intention to participate.
9. In May 1974 E.I. petitioned for hearings on AGNS' application for operating license and was admitted as a participant in this proceeding also.
10. At this time the Nuclear Regulatory Commission (NRC), formerly the AEC, ruled that the two licensing proceedings, on construction and on operating, would be combined.



11. The State of South Carolina announced its intention to participate in the combined proceedings.
12. In September 1974 the combined hearings got under way in Barmwell. The hearings were conducted as adversary proceedings with testimony under oath, cross-examination of witnesses, and discovery process. (When the hearings began, to determine whether or not a license permitting construction should be issued, the actual construction, which had proceeded at the owners risk, was approximately three-quarters complete.)
13. Some events of the 34 hearing sessions which extended from the fall of 1974 through January 1976:

- The 1971 report of the S.C. Legislative Study Committee (#4) was offered in evidence by counsel for the applicant, but was later withdrawn when questions about authorship arose, counsel for the intervenors having alleged that the report was prepared by Allied-General, the applicant.
- In 1975 the State of Georgia joined the proceedings.
- Following are some of the matters on which testimony and evidence was presented:

Krypton removal - The applicant has no plans to install removal equipment for the reason given that effective removal equipment will not be available for at least 10 years. However, other testimony held that there has been successful removal system in operation for some time.

Transportation

Health Effects - A reprocessing plant puts out approximately 3,000 times as much radioactive material as a reactor.

Seismology - The plant is constructed at the edge of a class three earthquake belt to survive an earthquake of intensity VIII.

Off-Site Contamination - Radioactive Iodine releases, according to a Nuclear Regulatory witness, may be 50 to 100 times the estimates in the AEC's Environmental Statement. Carbon-14 will be released, although this fact had not been previously disclosed by the AEC or the applicant.

(Applicant's testimony about Krypton removal equipment indicated the probability of similar releases from the Savannah River Plant; and that the combined effects of releases from these neighboring plants is an important consideration, became a part of the public record.)

14. In 1975 during the combined proceedings on construction and operating, AGNS applied for a license to store spent nuclear fuel in the Fuel Receiving and Storage Station (BFRSS) component of the plant for interim away from reactor storage purposes only.
15. E.I., their two co-intervenors; 221 Pickens Street, a Columbia business; and the ACLU petitioned the NRC to hold hearings on this proposal.

Proceedings on the BFRSS were formally under way with the preparation of, and comments on, a final Environmental Impact Statement, and with the qualifying of EI et al, and 221 Pickens Street as participants. (The ACLU petition was

denied.) Meetings, conferences, and a pre-hearing have been held, and 50 issues raised by the intervenors have been accepted by the NRC; and an exchange of information among the participants of the proceedings continues; however, no hearings have been scheduled as yet.

16. In June of 1975 AGNS proposed that AGNS and the Energy Research and Development Administration (ERDA)--now, the Department of Energy--enter into a cooperative government/industry program in which ERDA would build and operate the two facilities of the plant not yet built--the Plutonium Product Facility, and the Waste Solidification Facility.
17. In 1975 during the combined hearings, a motion was made by the intervenors to the Atomic Safety and Licensing Appeal Board, to defer licensing of the Barnwell Nuclear Fuel Plant until a Generic Environmental Statement on the use of Mixed Oxides i.e. recycling plutonium, (GESMO) had been prepared and approved. The motion was denied in October 1975.
18. However, a month later in Nov. 1975 the NRC issued an order setting up plutonium recycle hearings; but allowing for interim licensing of nuclear fuel recycle facilities. (The Barnwell Plant was the only reprocessing facility to which this interim licensing order would apply.)
19. In response to the NRC Order of Nov. 1975, KI joined National Resources Defense Council, the Sierra Club, West Michigan Environmental Action, Inc., National Intervenors, Inc., and Businessmen for the Public Interest, Inc. in petitioning the 2nd U.S. Court of Appeals for review of the NRC Order.
20. In May 1976, the Court ruled against interim licensing, until a final decision has been made on GESMO.
21. 1976 to the present. The GESMO hearings took place in Washington, D.C. Because of its generic nature, and because it was the beginning of a process that would culminate in the establishment of a national policy on the use of plutonium, organizations and state governments from all over the country participated including the Barnwell intervenors.
22. In April 1977 President Carter issued a policy statement which banned reprocessing and the use of recycled plutonium.  
  
This order had the effect of suspending the GESMO hearings and the BNFF hearings, but not the Fuel Receiving and Storage proceedings.
23. In August 1980 the Department of Energy (DOE) asked for comments on their intent to prepare an Environmental Impact Statement of away from reactor (AFR) storage in West Valley, N.Y., Morris, Illinois, and Barnwell, S.C.
24. The intervenors in the BFRSS have commented that in the case of Barnwell this would be repetitious as an EIS has already been prepared. (See #15).