UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
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PUBLIC SERVICE ELECTRIC & GAS COMPANY, et al.	)	Docket No. 50-272 (Proposed Issuance of Amendment to Facility Operating License No. DPR-70)
(Salem Nuclear Generating Station, Unit 1)	)	

LICENSEE'S MEMORANDUM IN SUPPORT OF ITS MOTION FOR SUMMARY DISPOSITION

I. Preliminary Statement

Summary disposition is an appropriate remedy whenever it becomes apparent that an intervenor's admitted contentions fail to present genuine issues appropriate for resolution in the proceeding.[1/] Motions for summary disposition under 10 C.F.R. §2.749 are analogous to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure and the same standards are generally applied.[2/]

Summary disposition is authorized where the moving party has shown "that there is no genuine issue as to any material fact and the moving party is entitled to a decision as a matter of law.[3/] The requirement that the facts as to

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1/ Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424-425 (1973).

2/ Pacific Gas & Electric Company (Stanislaus Nuclear Project, Unit No. 1), LBP-77-45, 6 NRC 159, 163 (1977). Alabama Power Co. (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 217 (1974); Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-74-36, 7 AEC 877, 878-879 (1974).

3/ 10 C.F.R. §2.749(d).

which there is a genuine issue be "material" is met if their existence or non-existence might affect the result of the action.[4/] "A factual issue that is not necessary to the decision is not material within the meaning of Rule 56(c) and a motion for Summary judgment may be granted without regard to whether it is in dispute."[5/] Thus, judgment must be rendered where, although disputable factual contentions remain, "the facts in the case which are undisputed would nevertheless require judgment as a matter of law."[6/]

Although the burden of showing the absence of any genuine issue of fact is on the moving party, "a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer . . . must set forth specific facts showing that there is a genuine issue of fact."[7/] If the party opposing the motion fails to come forward with competent evidence that genuine issues of fact

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4/ Hahn v. Sargent, 523 F.2d 461, 464 (1st Cir. 1975).

5/ 10 C. Wright & F. Miller, Federal Practice and Procedure, §2.725, at 507 (1973).

6/ John Hopkins University v. Hutton, 297 F.Supp. 1165 and 1198 (D.C. Md. 1968), aff'd in part, rev'd in part on other grounds, 422 F.2d 1124 (4th Cir. 1970).

7/ 10 C.F.R. §2.749; Gulf States Utilities Co. (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975). Accord Cleveland Electric Illuminating Co. (Perry Nuclear ower Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 753-756 (1977), wherein summary disposition was held to be improper where the moving party failed to establish, prima facie, the basence of a genuine issue of fact. See Adickes v. Krese & Co., 398 U.S. 144, 159 (1970); Weahkee v. Perry, ___ F.2d ___, No. 77-1340, slip op. at 19 (D.C. Cir Sept. 26, 1978).

exist to be tried, the undisputed statements contained in the movant's affidavits are taken as true.[8/]

The Atomic Safety and Licensing Appeal Board recently reaffirmed the use of the summary disposition procedure in another proceeding concerning an increase in storage in a spent fuel pool.[9/]

II. Background

Public Service Electric and Gas Company ("PSE&G" or "Licensee") for itself and as agent for the other owners Atlantic City Electric Company, Delmarva Power and Light Company, and Philadelphia Electric Company, applied to the Nuclear Regulatory Commission ("NRC") for amendment of Facility Operating License No. DPR-70 for Salem Nuclear Generating Station, Unit No. 1 ("Salem Unit 1" or "facility") located in Salem County, New Jersey. The amendment would revise the provisions of the Technical Specifications, Appendix A to Facility Operating License DPR-70, to permit an increase in fuel storage capacity from 264 to 1170 fuel assemblies in the spent fuel pool of the facility. The amendment would also revise design features and associated operating limits for the storage pool, as necessary, to accommodate the storage capacity. The application to increase the fuel pool storage capacity was made on November 18, 1978

8/ Smith v. Saxbe, 562 F.2d 729, 733 (D.C. Cir. 1977), citing Fitzke v. Shappell, 468 F.2d 1072, 1077 (6th Cir. 1972).

9/ Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC ___ (January 26, 1979), slip op. at 45.

and supplemented on December 13, 1977, February 14, 1978, May 17, 1978, July 31, 1978, August 27, 1978, October 13, 1978, October 31, 1978, November 20, 1978, December 22, 1978, January 4, 1979, January 15, 1979 and January 24, 1979.

On February 8, 1978, the NRC published in the Federal Register (43 Fed. Reg. 5443) a notice of "Proposed Issuance of Amendment to Facility Operating License" concerning the proposed change. In response thereto, three petitions for a hearing were submitted. After a prehearing conference held on May 18, 1978, the Atomic Safety and Licensing Board ("Board") admitted two intervenors, Lower Alloways Creek Township ("LACT") and Mr. and Mrs. Coleman as parties. Requests to participate as interested States pursuant to 10 C.F.R. §2.715(c) were received from New Jersey and Delaware and were granted by the Board.

On January 19, 1979, the NRC Staff transmitted its Safety Evaluation Report ("SER") and Environmental Impact Appraisal ("EIA") to the Board and parties.

Pursuant to the Board's Order Following Special Prehearing Conference dated May 24, 1978, discovery in this proceeding ended on February 9, 1978, three weeks after publication of the SER and EIA.

The following discussion demonstrates that no genuine issue of fact exists with regard to any of the contentions. As a result, the Licensee is entitled to summary disposition and the Colemans and LACT dismissed as parties. Thus no

hearing in this matter need be held. A statement of each contention, as granted by the Board precedes the discussion of each matter.

III. Argument

Colemans' Contentions 2 and 6

> 2. The licensee has given inadequate consideration to the occurrence of accidental criticality due to the increased density or compaction of the spent fuel assemblies. Additional consideration of criticality is required due to the following:
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> A. deterioration of the neutron absorbtion [sic] material provided by the Boral plates located between the spent fuel bundles;
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> B. deterioration of the rack structure leading to failure of the rack and consequent dislodging of spent fuel bundles;
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> 6. The licensee has given inadequate consideration to qualification and testing of Boral material in the environment of protracted association with spent nuclear fuel, in order to validate its continued properties for reactivity control and integrity.

Contentions 2 and 6 of the Colemans may be conveniently treated together in that they both deal with material property and compatibility considerations relative to the new racks for the spent fuel pool.

The only materials used in the fuel storage racks, the rack interties, and wall restraints are Type 304 stainless steel and Boral material sealed between an inner and outer

stainless steel shroud. [Affidavit of Edwin Liden, paragraph 2 (hereinafter "Liden, ¶__")]. The stainless steel shroud protects the Boral from exposure to the spent fuel pool water environment. Boral is a trade name for an aluminum and boron carbide matrix. The material properties for structural components used in the various analyses of the racks were taken from Appendix I of Section III of the ASME Boiler and Pressure Vessel Code. Type 304 was chosen for its compatibility with the spent fuel pool water, which contains boric acid at a nominal concentration of 2000 ppm boron and is the same material which is utilized in the present spent fuel racks. Stainless steel of this type has been widely utilized in the nuclear industry, as described in the Liden Affidavit at ¶¶2 and 3.

The Licensee is unaware of any corrosion or other deterioration of stainless steel in environments similar to the Salem spent fuel pool. Unirradiated stainless steel fixtures have been exposed in pools up to 20 years and Zircaloy clad spent fuel has been successfully stored in pools for up to 18 years without evidence of degradation [Liden, ¶3].

The Licensee has made detailed and comprehensive plans to assure that the fabricated racks are built and installed in accordance with specifications designed to assure their continued ability to perform their intended function. As part of this effort, careful control of the manufacturing

process and nondestructive testing of the fuel cells has been conducted to assure at least 95% leak tightness with a 95% confidence level [Liden, ¶5].

The details of the welding processes and other manufacturing and nondestructive and metallographic examination are described in the application [Liden, ¶6]. The quality assurance program includes a helium leak test utilizing a helium mass spectiometer which is capable of detecting very small pin holes, smaller than any which would be significant in the fuel storage cell service environment [Liden, ¶6].

Exxon Nuclear Co., Inc., has conducted a series of experiments to determine the effect of a hypothetical leak in the stainless steel shroud. Such a leak could potentially cause some minor corrosion of the aluminum in the aluminum-carbide matrix and the evolvement of hydrogen gas. The water leaking in the void between the shrouds would compress the gas at the top of the cell until an equilibrium pressure was reached. The hydrogen gas would increase the pressure in the gap between shrouds pushing the water level down until gas bubbles escape at the elevation of the crack. The worst location for a leak would thus be at the bottom due to the higher static pressure. The pressure would cause the inner shroud to bulge and move toward the center of the cell [Liden, ¶7].

These tests revealed that in the unlikely event that a leak in a fuel storage cell exists after installation in the

water-filled storage pool and before fuel is inserted, the worst potential consequence would be failure to be able to insert the fuel, thereby losing the affected cell from service. Prior to loading fuel in any location, a procedure will be utilized to determine whether cell swelling exists at that location and to determine whether the cell can be made serviceable [Liden, ¶8].

If a leak develops in a fuel storage cell with fuel already in place, the most severe result would be that the fuel could not be withdrawn with the normal fuel withdrawal force of the fuel handling crane. In this event, semi-remote tooling would be utilized to provide vent holes in the top of the storage cell annulus to relieve the gas pressure on the fuel assembly and permit routine removal [Liden, ¶9].

In another series of tests, Exxon Nuclear examined the ability of the Boral, to withstand the spent fuel pool environment. A number of test coupons of varying configurations, some of which were similar to the storage rack shapes, were exposed to fuel pool type environments for periods of up to one year. The coupons were examined for corrosion rate, pitting, bonding, edge attack and bulging. These experiments showed that simulated storage cells, with a leak simulating hole will sustain aluminum corrosion which will consume only a small percentage of the aluminum in the Boral

core after a 40-year exposure. Moreover, while some pitting, edge attack, and internal gas pressurization could occur to Boral plates, B_4C particles would not be dislodged in the process and thus no effect on criticality safety would occur [Liden, ¶10].

The Licensee, in addition to these test programs, has committed to a long term fuel storage cell surveillance program to verify that the spent fuel storage cell retains the material stability and mechanical integrity over its service life under actual spent fuel pool service conditions. Samples of flat plate sandwich coupons and short fuel storage cells are provided for periodic surveillance and testing. The samples are of the same materials and are produced using the same manufacturing and quality assurance procedures specified for the fuel storage cells. One short fuel storage cell and one flat plate sandwich coupon will be prepared such that the Boral material will be exposed to spent fuel pool environment. The planned frequency of examination would be about one year after rack replacement and about every two years thereafter [Liden, ¶11].

For their part, the Colemans admit that the two contentions are not based on specific studies or analysis, but are derived from their "technical advisor's general experience expertise and review of pertinent documents, with special emphasis on one 'Behavior of Spent Fuel in Water Cooled Storage (September, 1976), BNWL 2256,' which describes the

very limited experience (i.e., less than ten years) with storage of spent fuel in water cooled environment and discusses corrosion rates leading to deterioration.[10/] Contrary to this characterization of BNWL 2256, as discussed in the Affidavit of Liden at ¶3, this report describes satisfactory storage of Zircaloy-clad fuel for up to 18 years and concludes that low temperatures and favorable water chemistry are not likely to promote cladding degradation. Finally the report concludes that "there are no obvious degradation mechanisms which operate on the cladding under pool storage conditions at rates which are likely to cause failures in the time frame of probable storage." The report states that "there is sufficient evidence of satisfactory integrity of pool-stored fuel to warrant extending fuel storage times and expanding fuel storage capacities" [Liden, ¶3, and Appendix B to the Liden Affidavit at 4].

The focus of these contentions now appears to be limited to "the possibility of degradation or deterioration of the poison material which is relied on to permit the dense spacing of spent fuel particles without experiencing criticality [emphasis supplied]"[11/] which the Colemans postulated

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10/ Intervenor's [the Colemans] Responses to Licensee's Interrogatories dated July 20, 1978 at 1-2. The response indicates that BNWL 2256 was published in September 1976. It, however, appears to have been published in September 1977.

11/ Intervenor's Responses to to NRC Staff's Interrogatories dated August 18, 1978 at 2.

could be "gradual" and could occur in "several adjacent cells."[12/] The intervenors cited instances at the Monticello and Connecticut Yankee facilities for such deterioration.[13/]

Initially, the facilities cited have had their racks supplied by vendors other than Exxon Nuclear Company and thus we submit that experience at these other facilities has limited relevance to the issues in this proceeding [Liden, ¶12]. In any event, PSE&G and Exxon Nuclear Company have, by virtue of their quality assurance programs, nondestructive testing, and long-term sample surveillance program in the fuel pool, assured that problems which have occurred at other facilities are not likely to occur at the Salem Generating Station [Liden, ¶12]. Moreover, the long-term surveillance programs to be conducted by PSE&G and the experimental programs already conducted by Exxon Nuclear assure that there is no health and safety problem associated with the fuel pool, even should the spent fuel pool environment come into contact with Boral. The periodic sampling and testing of the Boral coupons would detect any incipient deterioration. Thus there is no substance to the Colemans' assertions regarding Boral.

In its response to the Staff's interrogatories,[14/] the Intervenors made several additional unsupported allegations concerning these contentions which are discussed and refuted

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12/ Id.

13/ Id.

14/ Id. at 4.

below. It is alleged without basis that there could be a variation such that the minimum Boron density would be such that Keff=1.0 and thus result in accidental criticality. The minimum loading of Boron of .02 gms B-10/cm which results in a conservatively calculated Keff of $\leq$0.95 is assured by specification of a higher average concentration of Boron during the fabrication process [Liden, ¶13]. The density of the Boron is assured by the quality assurance program which utilizes chemical tests and batch traceability to assure the proper loading [Liden, ¶13].

The Colemans allege that upper grid spacer damage would permit a decrease in the center to center space of cells in a local region. We submit that such a hypothetical situation, which could only result from a dropped load, is clearly beyond the scope of the contention. In any event, the Licensee has performed an analysis and conducted an experimental program to determine the effect of dropping a load over the spent fuel storage racks. The local crushing of the cell from such an event is limited to the upper seven inches of the lead-in section, above the rack module upper grid structure and above stored fuel assemblies. Thus, there would be no impact on the assemblies and no change in spacing and no effect on criticality would result [Liden, ¶14].

The next assertion is that Keff could be increased if two or more fuel bundles fail to be inserted fully into the cells due to distortion or swelling of the cell walls. As discussed previously, PSE&G will conduct a program to assure

that there has been no swelling of a fuel cell prior to loading of spent fuel [Liden, ¶15].

The Intervenors assert that the fuel handling crane could tip or lift a spent fuel rack module. The spent fuel handling crane has load limiting devices which render it incapable of lifting or tipping even a single module. Moreover the modules are tied together such that the postulated event is not credible [Liden, ¶16].

Thus, for the reasons discussed above, the Licensee is entitled to summary disposition for the Colemans' Contentions 2 and 6.

Colemans' Contention 9

9. The Licensee has given inadequate consideration to alternatives to the proposed action. In particular, the Licensee has not adequately evaluated alternatives associated with the Nuclear Reulatory Commission adopting the "no action" alternative for licensee's application, which would implicate the following:

A. expansion of spent fuel storage capacity at reprocessing plants;

B. licensing of independent spent fuel storage installations;

C. storage of spent fuel from Salem No. 1 at the storage pools of other reactors;

D. ordering the generation of spent fuel to be stopped or restricted (leading to the slow-down or termination of nuclear power production until ultimate disposition can be effectuated);

LACT Contention 1

1. The Licensee has not considered in sufficient detail possible alternatives to the proposed expansion of the spent fuel pool. Specifically, the Licensee has not established that spent fuel cannot be stored at another reactor site. Also while the GESMO proceedings have been terminated, it is not clear that the spent fuel could not by some arrangement with Allied Chemical Corp. be stored at the AGNS Plant in Barnwell, South Carolina. Furthermore, the Licensee has not explored nor exhausted the possibilities for disposing of the spent fuel outside of the U.S.A.

Both PSE&G and the NRC Staff have considered alternatives to the proposed expansion of the capacity of the spent fuel pool. For the Salem Generating Station, the expansion

of the storage capacity of spent fuel would have a negligible environmental impact [Liden, ¶17].[15/] Moreover, considering its economic advantages, deferral or severe restriction of the action here proposed would result in substantial harm to the public interest.[16/]

LACT alleges that "[t]he Licensee has not established that spent fuel cannot be stored at another reactor site." Subpart C of Coleman's Contention 9 raises the same point. As discussed below, it is not practicable to store the spent fuel from Salem Unit 1 at Salem Unit 2 or either unit of Hope Creek Generating Station.

Since Salem Unit 2 is expected to begin operation shortly, and will have an annual discharge of fuel, both unenlarged fuel pools would be full by 1983 even if the capacity of the pools were shared jointly. Due to the uncertainty in the availability of an Independent Spent Fuel Storage Installation (ISFSI) by that time, such an alternative could impact adversely on Unit 2 operation, and can be considered only a short term temporary alternative [Liden, ¶18].

Moreover, the environmental impacts of the extra handling of irradiated spent fuel, such as the dose received by workers during that transfer, would have to be attributed to this alternative inasmuch as the spent fuel pools for the units are completely separated and elements would have to be placed in a cask prior to transfer [Liden, ¶18].

15/ See also EIA at 20.

16/ Id. at 20.

If only the Unit 2 fuel pool were expanded, while additional capacity would be provided, the environmental impacts associated with fuel transfer, discussed above, would have to be weighed against this alternative [Liden, ¶18].

With regard to storage of Salem Unit 1 spent fuel at the Hope Creek units, it is unlikely that these units would be sufficiently complete to enable fuel to be stored prior to the unmodified Salem unit being full. Storage at Hope Creek would involve replacement of some of the Hope Creek racks with racks capable of holding Salem Unit 1 fuel, further limiting storage capacity at those units for their own discharged fuel. Again fuel would have to be transported to these units and those impacts weighed against this alternative [Liden, ¶19].

Considering that the same problem with spent fuel pool storage is being faced by all utilities, it is unlikely that there will be storage space available at any reactor. In this regard, the Staff cities an Energy Research and Development Administration study which found that up to 46% of operating power plants will lose the ability to refuel prior to 1984 without additional spent fuel pool expansion or access to offsite storage facilities [EIA at 18]. In any event, the cost associated with such storage would be at least comparable to those associated with the new racks at Salem Unit 1. Moreover, such alternative has no environmental advantages, while as discussed above, it has environmental impacts associated with an additional transfer of spent fuel [Liden, ¶20].

Next LACT states that "it is not clear that the spent nuclear fuel could not by some arrangement with Allied Chemical Corp. be stored at the AGNS Plant in Barnwell, South Carolina." The Colemans also allege that "expansion of spent fuel pool storage capacity at reprocessing plants" should be considered. These matters have been considered and have properly been rejected.

The Allied-General Nuclear Services (AGNS) reprocessing plant has not yet been licensed to receive and store spent fuel in the onsite storage pool. The Licensee has contacted AGNS and has been informed that in no event will the facility be utilized by AGNS, its owner, for the storage of reactor fuel absent reprocessing [Liden, ¶21]. Considering the President's April 7, 1977 statement deferring indefinitely the commercial reprocessing and recycling of the plutonium produced in the U.S. nuclear power programs, the storage capacity of that facility cannot be relied upon.

The NRC had under review an application by Exxon Nuclear Company for a storage pool and reprocessing facility to be located at Oak Ridge, Tennessee. A construction permit has not yet been issued and in view of the President's announced policy, and the termination of that proceeding by the NRC, reliance upon the construction of a storage pool in time for Salem Unit 1 is not prudent [Liden, ¶22].

The fuel storage pool at the Morris, Illinois facility is being utilized for General Electric Company owned fuel which had been leased to utilities or for fuel which General Electric had previously contracted to reprocess. Other spent fuel is not being stored in the absence of an express commitment to do so. There is no such commitment for Salem [Liden, ¶23]. Similarly, the Nuclear Fuel Services facility at West Valley, New York is not accepting additional spent fuel for storage even from those reactor facilities with which it had reprocessing contracts [Liden, ¶23].

Thus, there is no basis for viewing storage at an existing reprocessing facility as an alternative to expansion of the fuel pool capacity.

The Colemans allege that inadequate consideration has been given to the alternative of "licensing of independent spent fuel storage installations." The Staff has estimated that it would take at least five years to construct an ISFSI.[17/] There have been no concrete plans to build such a facility. Even should one be constructed, the costs would be much higher than those associated with the new racks for Salem Unit 1 inasmuch as a pool structure and supporting systems would have to be erected, and spent fuel transported to such a facility. The environmental impacts associated with constructing such a facility would also be greater than the minor impacts associated with replacing the racks [Liden, ¶24].

17/ EIA at 15.

The U.S. Department of Energy is considering providing interim fuel storage services on a contract basis if private storage is not available. This is not expected to be available before 1983-1984 [EIA at 16]. Inasmuch as there is no assurance that such facilities would be constructed prior to the Salem Unit 1 spent fuel pool being filled, such alternative is unreliable.

All alternatives previously discussed considered that the spent fuel pool could be filled up prior to an alternative being available. This is not the case. After the next (second) refueling for Salem Unit 1, scheduled for the first part of 1980, the facility will lose its capacity to discharge a full core from the reactor. While this capability is not a safety related consideration, it is prudent from an operational standpoint to have such capability. Therefore the loss of ability to sustain full core discharge next year should be weighed in favor of the proposed fuel rack expansion [Liden, ¶25].

LACT suggests that the Licensee should explore the possibilities for disposing of the spent fuel outside the United States. Considering the President's announced policy statement on nuclear policy, it is unlikely that permission would be granted to export spent nuclear fuel. In fact, the President's April 7, 1977 statement on nuclear power policy, states that the U.S. is exploring "measures to assure access to nuclear fuel supplies and spent fuel storage for nations

sharing common non-proliferation objectives."[18/] Thus, this alternative is not a viable one [Liden, ¶26].

Finally, the Colemans assert that the NRC should consider "ordering the generation of spent fuel to be stopped or restricted . . . ." The Licensee has estimated that a shutdown of Salem Unit 1 having a net electrical output of 1090 megowatts would cause incremental replacement power costs alone of $500,000 per day, based on the differential costs of producing energy from Salem as compared to production from other available units in the PSE&G and Pennsylvania New Jersey Maryland (PJM) Interconnection [Liden, ¶27]. The Staff, looking at the long term economic impacts rather than the short term incremental effects, factored in a capacity factor range of 60-70% to arrive at annual replacement costs associated with the discontinuance of operation on the order of $300,000 to $350,000 per day.[19/] Using either figure, these costs would still be far in excess of the costs associated with the proposed modification, i.e., $3,300 per fuel assembly or $3,000,000 for the entire cost of replacing the racks [Liden, ¶27].

In "The Intervenors Lower Alloways Creek Township Amended Answers to Licensee's Interrogatories (Set No. 1)" dated February 15, 1979, it was stated that LACT was conducting ongoing research regarding the following subject:

18/ The Department of Energy has stated that it will publish an environmental impact statement concerning the impact of receipt of foreign spent fuel for interim storage and possible ultimate disposal by the U.S. Government.

19/ EIA at 18-19.

> The alternative of permitting expansion may be a statutory regulatory responsibility pursuant to 42 U.S. Code, Section 5877, in that such action by the Nuclear Regulatory Commission would insure and promote action by the Utilities and the Department of Energy for the immediate safe and permanent disposal of spent fuel away-from-reactor sites. By permitting the alternative of reracking the Nuclear Regulatory Commission is avoiding its statutory obligation and perpetuating a potentially unsafe condition. The question of safety and health of the public is paramount. The ramifications of storing 24 cores at Salem #1, Salem #2, and Hope Creek #1 and #2, within a 17 year period is the natural consequences of permitting reracking at Salem #1.

It is apparent that LACT is seeking in the guise of this contention to litigate the question of the permanent disposal of spent fuel. Such matters are clearly beyond the scope of the issues in this proceeding. As this Board has already ruled, it is foreclosed in this proceeding from considering the issue of permanent disposal of spent fuel, citing Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41 (1978).[20/]

The cited section of the Energy Reorganization Act merely requires an annual report to Congress by the NRC and does not shed any light on any further alternative. Finally, the cumulative effects of storage have already been discussed. LACT has not presented anything here which would defeat the motion for summary disposition.

20/ Memorandum and Order dated April 26, 1978 at 11-12, 12-13, and 14. See also Illinois v. NRC, No. 78-1171 (7th Cir. January 10, 1979), Nuclear Regulation Reports (CCH) ¶¶20, 103 where the court upheld the NRC's decision not to consider the Morris Operation as a de facto permanent storage site.

Thus, the available alternatives have been adequately considered and there is no other alternative compared to replacement of the fuel racks which is better environmentally or economically. The Licensee is entitled to summary disposition on these contentions.

Colemans' Contention 13

> 13. The licensee has failed to give adequate consideration to the cumulative impacts of expanding spent fuel storage at Salem Nuclear Generating Station Unit 1 in association with the recently filed proposed amendment to the application for an operating license at the sister unit, Salem Unit 2. (See Amendment No. 42, Docket No. 50-311, filed April 12, 1978 which proposes modifications of spent fuel storage which the intervenor believes are similar in scope to the Salem Unit 1 application.). For example, the licensee assumes an increase in releases of Kr-85 by a factor of 4.5--due to the factor of 4.5 increase in spent fuel (licensee's application, at 10). A similar increase, absent exceptional controls, can be expected at Salem No. 2, resulting in a cumulative increase in Kr-85 emissions by a factor of 9--almost a full order of magnitude increase. (If similar spent fuel increases are postulated for the companion units, Hope Creek 1 and 2, now under construction, the cumulative increase could rise by a factor of 18, or almost two full orders of magnitude.)

The Licensee has assessed the offsite radiological effects of increasing the capacity of the Salem Unit 1 fuel pool. The results of such an evaluation show that the additional storage capacity causes only an extremely small increase in offsite doses.

Initially, contrary to the allegation contained in the Coleman's Contention 13, the fact that the storage capacity is increased by a factor of 4.5 does not mean that the offsite doses will be correspondingly increased by the same factor. The increase in offsite doses will be significantly less. [Affidavit of Robert P. Douglas at paragraph 3 (hereinafter "Douglas, ¶__")].

Most of the releases of radioactive material which contribute to offsite doses occur as the result of the initial transfer of fuel from the reactor to the pool, the initial storage and during its transfer from the fuel storage pool to the shipping cask for shipment offsite. Inasmuch as these activities would occur whether or not the storage capacity were increased, i.e., the spent fuel rack modification increases only the storage capacity and not the frequency or the amount of fuel to be replaced for each fuel cycle, such doses should not be associated with the requested change [Douglas, ¶4].

Because of the half lives and relative biological significance of the radioactive gases and the lack of any additional tritium released to the environment during the period of interest, the isotope of interest as far as offsite doses is concerned would be Kr-85 [Douglas, ¶¶5-6].

As part of its evaluation to assure compliance with 10 C.F.R. Part 50, Appendix I, a release from each Auxiliary Building of less than one curie per year of Kr-85 with the original racks in place was calculated [Douglas, ¶7]. If it is assumed that the release rate of Kr-85 is increased by a factor of 4.5 to correspond to the increase in the number of fuel elements being stored, a conservative assumption inasmuch as the release of Kr-85 is most likely to occur during the initial handling and first year of storage, and

that all Kr-85 releases from the auxiliary building were attributed to releases from the fuel pool, the maximum release from the auxiliary building would be 4.5 curies, an increase of approximately 3.5 ci/yr. The total plant releases of Kr-85 initially projected was 280 ci/yr. Thus the maximum percentage increase due to spent fuel storage pool expansion would conservatively be less than 1.25%. The offsite dose resulting from the additional Kr-85 assumed released would be 1.6×10^{-6} mrem [Liden, ¶3].

The NRC Staff has also independently calculated the additional dose due to the change in spent fuel racks in both Salem Units 1 and 2. Using even more conservative assumptions, the Staff concluded that the dose attributable to Kr-85 would be 0.005 mrem/year and less than 0.005 manrem/year to the population within 50 miles, which are insignificant [Douglas, ¶9].

The NRC Staff also considered the offsite doses due to I-131 and H-3, and concluded they would not be significantly increased [Douglas, ¶¶10-11]. Finally, as the Staff noted:

> In addition, the station radiological effluent Technial Specifications, which will not be affected by this action, will limit the total releases of gaseous activity including those from stored spent fuel. If levels of airborne radioiodine become too high, the air over the SFP can be routed through charcoal filters for the removal of radioiodine before release to the environment [EIA at 8].

Thus, even considering the cumulative radioactive releases from Salem Units 1 and 2, the offsite doses attributable to fuel pool expansion are insignificant. To consider that the Hope Creek fuel pool storage capacity would be increased is speculative at this time. [Affidavit of Robert L. Mittl, paragraph 3, (hereinafter "Mittl, ¶___")]. Certainly no application has been made to date to the NRC for such a change. Considering the scheduled dates for operation, there are additional options available to it which may not require expansion of the spent fuel capacity for the Hope Creek units.

However, were the spent fuel capacity for the Hope Creek units expanded and the increase of radioactive effluent were comparable to those from the Salem Generating Station, the total released from the fuel pools units would still be extremely small [Douglas, ¶12].

Ultimately, compliance with each facility's technical specifications which implements the requirements of 10 C.F.R. Part 50, Appendix I assures that the total releases from that facility, including those associated with the increased storage in the spent fuel pool, are in the "as low as reasonably achievable" range [Douglas, ¶13].

The Colemans have pointed to no other cumulative environmental impact of significance associated with the increase in the storage capacity of the Salem Unit 1 fuel pool and the Licensee is not aware of any [Douglas, ¶14]. Thus, summary disposition should be granted and this contention dismissed.

LACT Contention 3

> 3. While the Licensee has requested increased spent fuel storage capacity at its Salem Unit 1 it has not limited the use of such storage facility to fuel removed from Salem Unit 1. Storage of spent fuel from other units on or off Artificial Island therefore is a possibility and such storage creates many hazards not analyzed by the Licensee in its application. Included among these hazards are those created by unloading spent fuel casks.

PSE&G's application to the NRC for permission to enlarge the capacity of the Salem Nuclear Generating Station, Unit 1 spent fuel pool relates only to the storage of additional quantities of spent fuel from that Unit. PSE&G has no plans for utilizing the additional capacity to store fuel from Salem Unit 2, either of the Hope Creek Generating Station units, or any other nuclear generating station.

The additional capacity is needed for Salem Unit 1. It provides for 15 annual discharges while maintaining the capability for a full core discharge. A similar application to increase the spent fuel pool capacity to 1170 elements has been made for Salem Unit 2 [Mittl, ¶2]. Thus there will be no incentive to store spent fuel from Unit 2 at Unit 1 [Liden, ¶28]. Since the spent fuel storage facilities for the two Salem units are completely separate, if Unit 2 were hypothetically to be stored at Unit 1, transfer of the spent fuel from Unit 2 to Unit 1 in a cask would be required [Liden, ¶29]. Truck casks which would have to be used for

the transfer can accommodate only one pressurized water reactor fuel element. The cask would have to be sealed, decontaminated and then opened in the Unit 1 cask pool. This process is slow and cumbersome. Similar considerations would also apply to the storage of spent fuel from the Hope Creek Generating Station at Salem Unit 1. There is no incentive for storing Unit 2 or Hope Creek fuel in the Unit 1 spent fuel pool [Liden, ¶30].

PSE&G has never considered nor has it any plans to utilize the spent fuel storage capacity of the Salem Generating Station for storage of any other facilities' fuel [Mittl, ¶5].

In any event, the storage of fuel assemblies from other facilities at Salem Unit 1 is beyond the scope of this limited proceeding. This Board should take official notice, pursuant to 10 C.F.R. §2.743(i), that the Nuclear Regulatory Commission has required a separate application and has given a separate opportunity for hearing in cases where an applicant sought to transfer fuel discharged from one facility to another facility for storage. Under this precedent, a separate opportunity for hearing would be given for this action and such activities need not be considered under the present Notice of Hearing.[21/]

21/ See Docket No. 70-2623, Duke Power Co., Opportunity for Public Participation in Proposed NRC Licensing Action for Amendment to Materials License, SNM-1773 for Oconee Nuclear Station Spent Fuel Storage at McGuire Nuclear Station, 43 Fed. Reg. 32905 (July 28, 1978). See also Carolina Power and Light Company (Brunswick Steam Electric Plant, Units 1 and 2), Docket Nos. 50-324 and 50-325, Amendment 8 to License No. DPR-71 and Amendment 30 to License No. DPR-62 both dated August 26, 1977 which includes specific approval to store spent fuel from either Brunswick unit in either of the two spent fuel pools.

For the foregoing reasons, LACT Contention 3 should be dismissed.

IV. Conclusion

For the foregoing reasons, Licensee respectfully submits that Licensee's Motion for Summary Disposition should be granted and Mr. and Mrs. Coleman and Lower Alloways Creek Township be dismissed as parties to this proceeding.

Respectfully submitted,

CONNER, MOORE & CORBER

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