UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DUKE POWER COMPANY, et al.	)	Docket Nos. 50-413
	)	50-414
(Catawba Nuclear Station Units 1 and 2)	)	August 5, 1983

PALMETTO ALLIANCE ANSWER TO NRC STAFF AND APPLICANT'S MOTION FOR SUMMARY DISPOSITION OF CONTENTIONS 16, DES-19, AND 44.

Pursuant to 10 CFR § 2.749, Palmetto Alliance hereby answers opposing motions by the NRC Staff and Applicants for summary disposition of Palmetto Alliance Contention 16 and Palmetto Alliance and Carolina Environmental Study Group's DES Contentions 19 and 44/18. Palmetto Alliance urges this Atomic Safety and Licensing Board to deny these Motions For Summary Disposition on the ground that there exist many substantial and material issues of fact affecting the public health and safety and environmental impacts of the operation of the Catawba Nuclear Station that cannot be fully or adequately resolved except by live testimony and cross-examination on the record in a public hearing. In support of this answer Palmetto Alliance offers the following authority, discussion, Statements, Affadavits; and asks this Board to consider deposition testimony, answers to interrogatories, the Applicant's Application, Environmental Report, Final Safety Analysis Report (FSAR), the NRC Staff's Safety Evaluation Report (SER), Draft and Final Environmental Statements, and such other pleadings, documents, and matters of

record as appropriate. Further, as supported by Affadavit of counsel Palmetto Alliance asks that these Motions For Summary Disposition be refused or that a continuance be ordered to permit the obtaining of Affadavits as is more particulary described below, where facts essential to justify opposition to these motions cannot now be presented by Affadavit.

Palmetto Allaince is informed that Carolina Environmental Study Group, which party this Board has designated as lead party with respect to Contention 44/18, intends to respond to the NRC Staff and Applicant's Motions For Summary Disposition with respect to this embrittlement contention. Palmetto Alliance herein responds specifically to these motions with regard to Palmetto Contention 16, regarding the safety of receipt and storage of spent nuclear fuel from other Duke facilities at the Catawba Station, and DES-19 regarding the deficiencies in the NRC staff evaluation of the environmental impacts associated with this spent fuel storage proposal by Duke Power Company.

In its seminal decision establishing the principles for consideration of requests for summary judgement, which principles are "appropriate for use in determining motions for summary disposition" under the NRC Rules of Practice, Public Service Company of New Hampshire, et. al (Seabrook Station, Units 1 and 2), LBP-74-36, 7 AEC 877, 878 (1974), United States Supreme Court instructs that the burden of proving the absence of any genuine issue to be heard remains with the moving party:

> Where the evidentiary matter in support of the motion does not establish the absence of a genuine issue,

> summary judgement must be denied even if no opposing evidentiary matter is presented.

Addickes v. S.H. Kress and Co., 398 U.S. 144, 160 (1970).

And in weighing the evidentiary matter in support of the motion

> ....the inferences to be drawn from the underlying facts contained in (the moving party's) materials must be viewed in the light most favorable to the party opposing the motion.

Id., 398 U.S. at 158-159.

Palmetto Allaince urges that weighed in this scale submittals by Applicants and the NRC staff fall far short of supporting the extreme remedy of summary disposition.

In this proceeding on application for authority ot operate the Catawba Nuclear Station, Units 1 and 2, Applicants Duke Power Company et al., carry the ultimate burden of proof of entitlement to such necessary licenses, 10 CFR § 2.732, as well as burden on issues in controversy raised by other parties. Tennessee Valley Authority (Hartsville Nuclear Plant) ALAB-463, 7 NRC 341, 356, 360 (1978). That burden upon Applicants on particular issues, such as the consideration of alternatives under the National Environmental Policy Act (NEPA), may be triggered by an Intervenor showing sufficient only to require reasonable minds to inquire further. Vermont Yankee Nuclear Power Corporation v. NRDC, 435 U.S. 519, 554, 55 LEd. 2d. 460, 98 SCt. 1197 (1978).

> A summary judgement is neither a method of avoiding the necessity of proving one's case nor a clever procedural gambit where a claimant can shift to his adversary his burden of proof on one or more issues (citation omitted)...the general rule in

> this Commission is that the 'the Applicant or the proponent of an Order has the burden of proof' (citation omitted)...in this case, the Applicants were also proponents of ...summary disposition.

Cleveland Electric Illuminating Company et.al. (Perry Nuclear Power Plant, Units 1 and 2) ALAB-443, 6 NRC 741, 753 (1977).

Stated by the Licensing Board considering motions for summary disposition in a spent fuel pool amendment proceeding, also instructive on the number of substantive points bearing on Duke's cascade plan contentions before this Board;

> A decision on summary disposition can be a watershed in the history of a case. If motions are too readily granted, substantial safety or environmental issues may be excluded from the serious intention they deserve, and in some cases a nuclear power plant might be permitted to operate with a defect which should have been remedied. In such a case the Commission may fail to live up to its important statutory responsibility to protect the public safety and the environment. See report of the President's Commission on the Accident at Three Mile Island, John G. Kemeny, Chairman (1979) et. 7-9, 51.

Consumers Power Company (Big Rock Point Plant) LBP-2-8, 15 NRC 299 (1982).

Here for consideration are the two remaining contentions of Palmetto Alliance questioning Duke Power Company's so-called "cascade plan" , whereby subsequent to the safety and environmental analysis performed by the Commission underlying the Construction Permit for the Catawba facility, Duke has evolved a plan for the trans-shipping and storage of high level radioactive spent fuel from its other nuclear facilities - three units at Oconee and two units at McGuire - for receipt and storage - apparently unlimited in time or

for the duration of the facilities operating license - will be greatly expanded Spent Fuel Storage Facility at the Catawba Station, application at pp. 12 and 13, the present capacity of 1,418 assemblies in each of two pools. The Atomic Energy Commission staff environmental safety reviews of the Catawba Spent Fuel Storage Facility at the construction permit stage of this proceeding was based on a facility with a capacity of only 265 fuel assemblies. See, Boegli, Branagan and Serbu affidavit support of staff summary disposition motion on Contention 19, p.5.

In its operating license application Duke Power Company et. al. tells us only this:

> "Applicants further requests such additional source, special nuclear, and by-product material licenses may be necessary or appropriate to the acquisition, construction, possession, and operation of a licensed facilities and for authority to store irradiated fuel from other Duke nuclear facilities. At present, Duke has no specific plans to utilize the storage alternative but, rather, considers it prudent planning to have the storage at one of the alternatives available."

Application for licenses at page 12.

Palmetto Alliance believes Duke Power Company's "cascade plan" is unprecedented in scope, scale, and the seriousness of the health, safety and environmental effects likely to be born by the public living not simply in proximity to the Catawby facility but to the Oconee and McGuire stations and to the citizens of such communities as the City of Charlotte North Carolina lying along the proposed trans shipment routes, see April 2, 1982 letter Parker to Denton response 10.

In its December 9, 1981 Supplement Palmetto Alliance raised five contentions regarding Applicants spent fuel transportation and storage plans; Contentions 14, 15, 16, 17, and 38. This Board rejected all of these Contentions except Contentions 15 and 16, in part only. The Board deleted reference from Contention 15 to Catawba as "an Away From Reactor (AFR)" spent fuel storage facility and admitted it ultimately as DES Contention 19; and admitted Contention 16 after deleting reference to transportation of spent fuel from other Duke facilities. The scope of Palmetto Alliance and CESG's contentions regarding Duke's cascade plan are thus limited to the safety and environmental impacts of the storage of irradiated fuel assemblies from other Duke Nuclear facilities. The Board has rejected any claims regarding the safety or environmental impacts, including the evaluation of need and potentialmitigating alternatives, involved in the actual transshipment scheme effected by Duke's cascade plan.

In its April 2, 1982 letter by William O. Parker, Jr. to Harold R. Denton of the NRC, responding to questions by Ms. Adensam of the Commission of March 8, 1982, Duke Power Company explained its cascade plan:

> Assuming the use of a single element truck cask, the maximum number of shipments per year would be 300 from each station. Shipments from Oconee would be by truck. Shipments from McGuire would by by truck and/or rail.

Id. et. 3a.

For three units at Oconee and two units at McGuire, thus, Duke's

plan reflects either 1500 individual truck shipments and assemblies per year (5 X 300) or 600 (2 X 300).

In performing its draft environmental statement analysis the NRC staff conducted an "environmental impact appraisal for trans shipment of spent fuel from Oconee and McGuire to Catawba Nuclear Station ," Appendix G, premised on the planned 600 transshipments per year to Catawba.

In their September 22, 1982, Supplement raising Contentions regarding the DES Palmetto Alliance and Carolina Environmental Study Group particularized other original spent fuel plan NEPA Contention number 15 as follows:

> The "environmental impact appraisal" performed by NRC staff, pp. G-1, G-2, and G-3 of the DES is totally inadequate to provide a basis for agency approval of licenses sought. The staff totally fails to analyze or even assert the need for the transshipment and storage of spent fuel from other plants at Catawba, to evaluate either quantitatively or qualitatively the "benefit" to be derived from this action; grossly underestimate the environmental costs and other impacts from the proposed action such as the risks of plainly credible very severe accidents in transshipment under conditions more severe than described in Appendix B to 10 CFR part 70 or involving defective casks which cannot withstand those conditions; and, further, the Staff totally fails to analyze or consider the alternatives available for reducing or avoiding these adverse effects such as onsite rod consolidation, storage in dry casks, in dry wells beneath grade, in concrete storage silos or in air-cooled vaults - alternatives which are easily available at lower total cost.
> "Preliminary assessment of alternative dry storage methods for the storage of Commercial Spent Nuclear Fuel" , DOE/ET/ 47929-1 (UC-A5) E.R. Johnson Associates Inc. (November, 1981).

In the fact of intervenors claims and the staff "environmental impact appraisal" Duke Power Company et. al. recasts its cascade

plan significantly:

> However, to clarify the situation, it is Duke's intention that any such shipments will be made their environmental impacts will be encompassed within the values contained in Table S-4 (10 CFR part 51). Thus, if a decision is made to ship spent fuel from Oconee or McGuire, or both to Catawba, no more than 60 such shipments per year will be made from each reactor, for a possible maximum total of 300 shipments per year from both Oconee and McGuire.

November 2, 1982 Letter Hal B. Tucker, Duke Power Company to Harold R. Denton, NRC.

Apparently on the basis of these representations, at least in part, and a conviction that the Table S-4 evaluation of impacts is to be viewed as conclusive of the issues, this Board excluded all portions of intervenors spent fuel transshipment contentions except what remains today as Palmetto Contention 15 and DES Contention 19. Apparently also on the same basis the Staff withdrew its DES "environmental impact appraisal";

> "Because no new environmental impacts introduced by the proposed transshipments and because the environmental impacts of transporting spent fuel McGuire and Oconee have already been factored into the licensing of those facilities, no environment impacts for spent fuel transportation have been factored into the cost/benefit balancing for Catawba.

FES, Appendix G, January 1983.

Palmetto Alliance Contention 16 now reads:

> Applicants have not demonstrated their ability to store irradiated fuel assemblies from other Duke nuclear facilities so as to provide reasonable assurance that those activities do not endanger the health and safety of the public.

Palmetto Alliance and Carolina Environmental Study Group joint Contention DES 19 reads:

> Failure to evaluate the environmental costs of operation of Catawba as a storage facility for spent fuel from other Duke facilities compromises the validity the favorable cost-benefit balance struck at the construction permit phase of this proceeding. Since the CP stage hearing, Duke Power has considerably expanded the Catawba spent fuel poor capacity and provided for denser storage of irradiated fuel. Thus SAR Table 1.2.3-1. Applicants intend to use Catawba for storage of irradiated fuel from the McGuire and Oconee nuclear facilities of Duke Power Company. FSAR 9.1.2.4; OLA Application, pp. 11-12.

The "cascade plan" Duke Power Company et.al. represents a radical recasting of the design and utilization of the Catawba facility's spent fuel storage pools and the plans for management of the highly radioactive irradiated fuel from Duke's nuclear facilities.

> Reactor pools were designed to hold one and one third reactor cores. This allowed space for one year's discharge of irradiated fuel (1/3 of a core) plus space for one complete core (called full core reserve or FCR) in case the reactor needed to be emptied of fuel for reactor repairs. The design was based on the assumption that fuel would cool for 1-half year and then be shipped to a reprocessing plant or an off-site location. No more than 1-third of the reactor core would ever be in residence.

Resnikoff, The Next Nuclear Gamble: Transportation and Storage of Nuclear Waste, p. 40,(1983)

At the construction permit stage of this proceeding the Atomic Energy Commission Staff evaluated the safety and environmental effects of the spent fuel storage pool capacity of 265 fuel assemblies

representing slightly more than one and 1/3 X the 193 assembly full core. The present capacity of each of the Catawba pools has been increased by more than five times to 1418 assemblies. Boegli, Branagan, and Serbu affidavit supporting NRC Staff Motion for Summary Disposition, p. 5.

In its 9/1/76 study, "Expanded Catawba heat Load on the Fuel Pool" Duke models the ability of the existing spent fuel pool cooling system under the following assumptions:

> The addition of approximately 51 feet to each Catawba pool and the use of 13½ inch spacing will increase the storage capacity from approximately 662 to 1412. With 64 assemblies this will provide 22 batches of storage with 4 spare spaces.

Id. p. 5 of 30.

Thus, the actual as-built design, and proposed operating plan for the Catawba facility contrasts strikingly with both the model for the reference PWR reflected in Summary Table S-4, ie. 60 outgoing assemblies per year per reactor to a fuel reprocessing plant, See, Board Order Ruling of Spent Fuel Contentions of February 25, 1983, at p. 4, as well as the original design and operating plan for the Catawba facility as reflected in the design considered at the Construction Permit stage. It is the safety consequences and environmental impacts of these changes upon which Palmetto Contention 16 and DES ontention 19 are focused.

What are the safety consequences of expanding the capacity of the Catawba spent fuel pools- by a factor of 5X or more (265 to 1418 fuel assemblies), or by a factor of more than 2X (662 to

1418 fuel assemblies) without increasing the capacity of the spent fuel pool cooling system to handle the increased heat load? Wher evidence in the Big Rock Point Spent Fuel Proceeding reflected that it would take "one month for all the water above the fuel to boil away, " upon loss of cooling capacity, 15 NRC 299 at 304, but boil off and exposure of fuel assembilies would occur at Catawba only 72 hours after loss of cooling capacity, Singh and Jabbour Affidavit supporting Staff Motion for Summary Disposition of Contention 16 at p. 7, has the reasonable assurance of safe operation been compromised? Where up to 300 spent fuel shipments per year will be received at Catawba requiring handling and storage, but no procedures have been developed, nor staff hired or trained, nor compliance with Commission guidelines for control and handling of heavy loads been demonstrated, see Deposition and affidavit of Tuckman and Singh and Jabbour at pp. 8-12, are there not significant unmet burdens of proof yet upon Applicants requiring evidence on a record at a hearing? Where this Board itself has noted "the fact that the FES contains very little analysis of environmental impacts associated with the spent fuel pool," February 25, 1983, Order at p. 9, can it be said with any confidence that the Commission's NEPA obligations have been met with respect to Duke's spent fuel storage proposal?

Affidavits presented by Applicants and Staff largely repeat conclusions and factual assertions already disputed by Palmetto such as contained in the FSAR, SER or FES, and generally fail to

"show affirmatively that the affiant is competent to testify to the matters stated therein." 10 CFR 2.749(b). As to the significant new matter such as the Staff's new detailed environmental analysis and Applicnats' new description of cask and spent fuel handling procedures, Palmetto seeks a fair opportunity to obtain expert analysis and counter affidavits if needed to meet such new matter.

Palmetto Alliance respectfully urges that the Motions for Summary Disposition by Applicants and the NRC Staff be refused or that Palmetto be permitted to obtain the assistance and affidavits of the experts as identified in the Affidavit of counsel appended hereto.

PALMETTO ALLIANCE CONTENTION 16

Material Facts As To Which There Is
A Genuine Issue To Be Heard

1. The Licensing Board has not barred all consideration of loss of on-site power.

2. The Applicants do not satisfy the "criticality" aspect of GDC 62.

3. GDC 62 is not inapplicable to the cooling capacity aspect of Palmetto Contention 16.

4. In the event of an accident which renders the cooling system inoperative, the stored spent fuel assemblies will not remain covered for 72 hours.

5. The Applicants spent fuel cooling system and cask handling plans do not satisfy GDC 44 and 61 and GDC 62 and GDC 63.

6. Under normal conditions the failure of one train will

compromise the design temperature parameter.

7. Under abnormal conditions, consideration of the failure of either train is appropriate. Abnormal conditions do not constitute a "failure" within the meaning of the so called "single failure criterion".

8. 72 hours is not sufficient time for the operation to initiate corrective actions in recovering from beyond design basis fault conditions. The 72 hours that it would take for the fuel rods to be exposed is not a safe cushion or margin for error because a) it is not long enough, and b) the boiling in the pool during those 72 hours would cause dangerous release of radioactive particulates into the air that would expose workers to dangerous radiation doses.

9. Redundant manually initiated make-up sources cannot provide virtually unlimited fuel pool make-up from the refueling water storage tank (by means of gravity feed) and the ultimate heat sink (The Nuclear Service Water System).

10. The spent fuel liner will likely rupture if the water in the fuel pool reaches temperatures in excess of 150 degrees F.

11. The spent fuel liner plate will likely leak if the water reaches 212 degrees F.

12. The leaks resulting from a failure in the liner plate would be significant.

13. A cask drop accident and criticality is not an impossibility.

14. It has not been demonstrated that the mechanical stops will prevent the cask handling crane from traversing the spent fuel pool.

15. The procedures described by Michael Tuckman in his affidavit fail to satisfy GDC 61.

16. GDC 2 and 4 require consideration of cask drop accident.

17. The likelihood of aircraft crashes is significant and their consideration is warranted.

18. Duke's cascade plan will result in significant increases in heat load. See deposition testimony of Tuckman, Snow, Green May 12, 1983.

19. The NRC Staff has not done sufficient independent analysis of the health and safety significance of Duke's cascade plan.

20. It has not been adequately demonstrated that a neutron multiplication factor of less than or equal to 0.95 is adequate to provide sufficient margin to preclude criticality in fuel pools.

21. The NRC Staff did not perform any direct calculations of the reactivity of the Catawba spent fuel storage arrangement within the racks. Instead, the Staff only made comparisons to the designs of the spent fuel storage racks in other plants. This comparison is not an adequate substitute for direct analysis.

22. The fuel storage arrangement at Catawba is not adequate to maintain K/eff below 0.95 in the event of a fuel assembly being dropped across the spent fuel racks. The design is not adequate to maintain acceptable margin to criticality.

23. The margin to criticality for the Catawba spent fuel pool has not been accurately measured; and this margin has been reduced to an unacceptable level by Duke Power Company's proposed cascade plan.

24. The dominant characteristics of Oconee and McGuire spent fuels with respect to evaluating their impact on criticality in

the Catawba spent fuel pool are 1) The U-235 enrichment, and 2) their number and geometric arrangement.

25. The Applicants analysis has not adequately demonstrated that criticality will remain below 0.95 for any configuration of fuel storage in the Catawba pool that would involve fuel from McGuire and Oconee.

26. It has not been demonstrated that the two fuel pool cooling trains are completely redundant since it is not clear whether the trains share the same piping system, in which case a single failure in the piping system could disable both cooling trains.

27. The estimate that the maximum increase in heat load due to the proposed storage of non-Catawba fuel will be 2% is misleading and inaccurate.

28. It has not been demonstrated that, under normal conditions, a single cooling train can keep the water temperature below 125 degrees F. or that both trains can keep a mix of Oconee, McGuire and Catawba fuel under 140 degrees F.

29. Assuming a maximum heat load, it has not been demonstrated that the Applicants SFPCS (two trains) can keep the water temperature below 150 degrees F.

30. The operation of sources providing "make-up water" has not been sufficiently described so as to demonstrate that these source can prevent pool water boil-off or exposure of the fuel rods.

31. The system piping does not ensure that failure of any pipeline cannot drain the spent fuel pool below the water level required for radiation shielding.

32. The NRC Staff has not adequately demonstrated the adequacy of their two-phase plan for ensuring the safe control for heavy loads at nuclear power plants.

33. Since the mechanical stops that the Applicants and Staff contend will be placed to prevent the cask handling crane form traversing the spent fuel pool have not been installed a genuine issue remains.

34. The large increase in the number of spent fuel casks being handled under the Applicants proposed plan increases the likelihood of mishandling and/or cask drop accidents since Applicants have no experience with such a steady inflow and outflow of spent fuel casks.

35. The large increase in the number of spent fuel casks

being handled under the Applicants proposed plan and the increased likelihood of mishandling, cask drop accidents, and pool water boil-off means that the Applicants are not assuring that doses to workers are as low as reasonable achievable.

36. There is no reasonable assurance that the storage, cooling, and handling of irradiated fuel assemblies from Oconee and McGuire at Catawba will be accomplished in a manner that does not endanger the health and safety of the public.

ARGUMENT

The most fundamental point with regard to the handling, cooling, and storage of spent fuel at Catawba is that Duke's so-called cascade plan entails significant safety consequences. The plan represents a legal as well as technical change in the design of the Catawba facility. Major changes in the plans for spent fuel handling, cooling and storage have been made since the construction permit was granted. The exact nature of those changes has itself been uncertain, witness Duke Power Company's vague, open-ended application for storing non-Catawba fuel.

Duke's original application did not specify whether

additional fuel assemblies beyond those from McGuire and Oconee would be stored at Catawba (See Duke Power Company's Response to Elinor G. Adamson's letter of March 8, 1982). In April Duke projected a maximum of 300 shipments per year per station to the Catawba station (Duke response to Adamson letter). While some months later Duke reflected that no more than 60 transshipments per year will be made from each reactor for a maximum total of 300 shipments per year from both Oconee and McGuire together. (See November 2, 1982 letter from Hal Tucker to H. Denton.) As noted earlier, the Duke cascade plan represents a massive increase in the number of fuel assemblies to be stored, although it is unclear whether the increase is a five-fold increase or somewhat less than a three-fold increase. And although the Applicants like to refer to the consequent increase in the heat load as an "alleged" increase, in depositions three company witnesses acknowledged the obvious fact that the heat load will increase.[1] What this means is that the plan calls for Duke Power Company to increase the number of casks they must ship and handle from 60 to 300 (as well as requiring that Duke not only take casks <u>out</u> of the fuel pool for shipment but also receive loaded casks for storage) and cool an expanded inventory and heat load. The importance of the change in Duke's

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1. Palmetto Alliance has been unable to procure a transcript of these documents--the Applicants have refused to make copies available--and hence cannot cite a page number.

plans is made clear by the deposition testimony of Duke experts Messrs. Tuckman, Green and Snow, who reflect that the cascade plan will require hiring of new personnel and extra training. (See deposition testimony of Messrs. Tuckman, Green and Snow, May 12, 1983.) The response of Duke and the NRC Staff to these significant changes made after the issuance of the construction permit has been clearly inadequate. The Applicants efforts are clearly insufficient to justify their conclusion that no basic changes in the cooling system are called for and that the plan has virtually no impact on safe handling of fuel casks. Many areas of uncertainty, which Intervenors elaborate on below, remain. Neither the Staff nor the Applicants have succeeded in meeting their burden for summary disposition.

Palmetto Alliance is content to address the issues raised by contention 16 in the Order preferred by the Applicants. Hence, what follows will be a consideration of the Applicants objections to 1) what the Applicants call the "cooling capability aspect" of contention 16, 2) that part of the contention relating to potential cask drop accidents and fuel handling accidents and 3) the potential for aircraft crashes threatening the public health and safety.

Before dealing with the specific, technical concerns raised with respect to cooling capability, Intervenors are compelled to correct two gross misconceptions of Palmetto

Alliance's thesis. First, as the Applicants understand, Palmetto Alliance contends that the probabilty that the water in the Catawba spent fuel pool will reach dangerous temperatures that could result in ruptures in the pool liner plate, pool water leakage, or boil-off, is increased because of the fact that design modifications at Catawba that have more than doubled (or quintupled according to Staff) the number of fuel assemblies to be stored (thereby dramatically increasing the heat load). As Palmetto Alliance reflected in its May 27, 1983 Further Supplementary Responses at p.25,

> in other words, the cooling trains and other structures, systems, and components important to safety were designed to operate with respect to a much lower heat load than the subsequent modifications that the Cascade Plan called for. If the safety related systems were designed so as to prevent water temperature in the pool from reaching dangerous levels when the pool contained a maximum of 662 fuel assemblies, then expanding the pool to hold 1418 assemblies significantly increases the heat load and reduces the margin for error.

At p. 6 of their Motion for Summary Disposition on Contention 16, the Applicants cavalierly dismiss this important concern by asserting that "comparisons between past and present designs (i.e., reduced margin of error allegations) are irrelevant." This assertion is made without any statutory or judicial authority. The Applicants characterize the Boards Order of March 5, 1982 ruling that "the design description set forth in the construction phase PSAR is not an issue in this case,"

(Applicants Motion at p.6). Whether this has anything to do with the appropriateness of "reduced margin of error allegations" is an open question. In any case, an examination of pages 19 and 20 of the Board's March 5 Order does not reveal any mention of the PSAR. Furthermore, it seems clear that this reduced margin of error (and nothing in the Applicants Motion persuades Palmetto Alliance that this margin has not been reduced) is--at the very least--sufficient to require reasonable minds to inquire further regarding the safety of spent fuel handling and cooling at Catawba (Vermont Yankee 435 US 519, at 486).

Second, the Applicants contend, incredibily, that Palmetto Alliance's concerns are unrelated to the presence of Oconee or McQuire spent fuel at Catawba, but is rather a "general" spent fuel contention. This little ruse seems to go like this: Palmetto Alliance and CESG have contended that there is no fundamental difference between Catawba spent fuel and Oconee/McQuire spent fuel such that one results in a greater heat load than the other (Intervenors June 6, 1983 Responses to Applicants Follow-up Interrogatories on DES Contentions 11, 17 and 19 at page 7). Therefore, since our contention refers only to the expanded heat load occasioned by Oconee/McQuire's spent fuel at Catawba and not to any distinctive feature of Oconee/McQuire spent fuel, then Palmetto Alliance's concern is unrelated to the presence of Oconee/McQuire spent fuel at Catawba (which, of course, is the subject of the contention). This sort of

gamesmanship is entirely inappropriate to these proceedings.[2] The Staff has also attempted to down-play the significance of Duke's cascade plan. On page 6 of their affidavits Messrs. Singh and Jabbour contend that "the maximum increase in heat load due to storage of non-Catawba fuel is estimated to be less than 2%." Messrs. Singh and Jabbour reflect an understanding that the subject of Palmetto's contention is the Applicants proposal to receive and store up to 300 spent fuel assemblies per year from the Oconee and McGuire facilities in the Catawba fuel pools (see Applicant's Motion, Singh/Jabbour Affidavi point 4, p.2).

Given this understanding Palmetto can only assume that the above-quoted statement is meant to represent that more than doubling the number of spent fuel assemblies as called for in Applicants' plan will cause 2% rise in the heat load. We contend that this is a false and misleading statement designed to portray the Applicants' plan as bearing no real safety significance. The facts belie such an interpretation. The Applicants and the Staff have failed to demonstrate the adequacy of the Catawba spent fuel cooling system (CSFCS). Most of the Applicants' and Staffs' efforts are directed toward evaluating the CSFCS under "normal

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2. This is only one instance of what Intervenors believe to be a pattern of disrespect and abuse of the discovery and hearing process. See attached Motion for Sanctions.

conditions" (see especially Staff Affidavit of A. Singh and K. Jabbour pp. 5-8). Normal conditions is understood to refer to Catawba fuel only (with one-third core with full irradiation and 7-day decay, one full core of open spaces and the remainder of the pool filled with fully irradiated fuel from the previous yearly refuelings). But this is not relevant to Contention 16, which explicitly questions Applicants ability to safely store fuel assemblies "from other Duke nuclear facilities". In requesting a license to receive and store up to 300 shipments of spent fuel per year the Applicants have, in effect, asked permission to operate under "abnormal conditions". Yet the Applicants contend that under "abnormal conditions," consideration of the failure of either train is inappropriate because it violates the single failure criterion (see Applicants Motion at p. 8).

Palmetto contends that since abnormal conditions, as defined by the Applicants and Staff, are the subject of this contention, which has been admitted by the Board, then a consideration of the failure of one or both cooling trains is required. The single failure criterion cannot include consideration of operating conditions requested by Duke as a failure that eliminates considerations of the adequacy of the CSFC 5 under Duke's revised plan. In addition, the assertion that assuming the unlikely loss of both trains of the spent fuel pool cooling system and assuming no make-up water is supplied"

> analysis showed that there are at least 120 hours before all the water in the pool would evaporate and it will take 72 hours before the fuel assemblies are uncovered. This affords ample time under any foreseeable conditions to initiate make-up water replacement to maintain the water level in the pool"

See NRC Staff Motion, Affadavit of A. Singh and K. Jabbour, point 11 at p. 7.

To begin with, the above statement is misleading in so far as it implies that the difference between 72 hours (the point at which the fuel assemblies are uncovered) and 120 hours (the point at which all water is drained out of the pool) provides an extra margin of safety. Not long after the fuel rods are exposed they will bgein to melt and fire is likely to begin soon after. Even more importantly, the calculation that in just 72 hours the rods would be exposed is a telling one. In the Big Rock Point licensing case, expert testimony offered by David P. Blanchard on behalf of the Applicants, Consumers Power Company, reflected that in the case of a "TMI-2 type accident," where cooling equipment fails, the boiling rate in the Big Rock spent fuel pool "would be 2 gallons per minute, thereby requiring on month for all the water above the fuel to boil away" (See Consumers Power Co. (Big Rock Point Plant) 15 NRC 299, at 304 (1982).

Whereas it would take 30 days to expose the fuel rods at Big Rock, it would take just 3 days at Catawba. It seems reasonable to surmise that more than doubling the inventory of

the fuel assemblies might explain some of this difference. At the very least the Applicants have not eliminated dispute over the adequacy of the CSFCS.

Palmetto Alliance further contends that the Applicants have not demonstrated that 72 hours is sufficient to initiate make-up water replacement to maintain the water level in the pool. This is so because: 1) it is not clear that the cooling trains are completely redundant since the Applicant and Staff provide no assurance that the cooling trains do not share a single piping system, and 2) the Applicants have not provided sufficient information regarding the make-up water systems that Applicants contend "can provide virtually unlimited fuel pool make-up" not described at all (see Applicants Motion, Snow affidavit point 8 at p. 3). The Applicants cite a "discussion" in section 9.1.3.1.4 that allegedly explains how the KF system prevents a reduction in fuel storage coolant inventory that contains no description of the system and how it works. Palmetto Alliance draws the Board's attention to the Licensing Board's ruling in the Big Rock Point case where the judges noted that

> Despite the lack of specific documentation for these concerns, they are genuine issue. Although Applicant and Staff decided that a make-up water system should be employed, neither have described the system in sufficient detail to provide assurance that it will work when called on.

Id. at p. 305.

With respect to Palmetto Alliance's concern regarding mishandling spent fuel casks as a result of the massively increased volume of cask handling incidents required under Duke Power's cascade plan, the Applicants in their Motion make serious errors of omission and commission. While it is true that "in essence Palmetto Alliance alleges that GDC 61 has not been met because written procedures do not exist with respect to fuel handling regarding the inadvertant removal of spent fuel cask lids" (Applicants Motion at p. 12), Intervenors also noted that deposition testimony reflected that a 17 foot long cask described in the FSAR Cask Drop Accident figure would protrude some two feet above the shielding water in the cask handling pit where the cask lid is to be removed. This problem clearly raises serious questions about the Applicants' ability to meet the GDC 61's requirement for "suitable shielding for radiation protection;" a problem made more serious in light of the Applicant's confusion regarding lid removal procedures during the May 12, 1983 depostions (See footnote to Tuckman Affidavit at p.7).

Furthermore, the Applicants' response to Intervenors' allegations with respect to fuel handling procedures are wholly inadequate. It is the Applicants which have the burden of showing the absence of a genuine issue as to any material fact

(Addickes v. S.H. Kress & Company 398 U.S. 144 (1970). Cleveland Electric and Illuminating Co. et al (Perry Nuclear Power Plant, Units 1 and 2) ALAB-443, 6 NRC 741 (1977)) But, instead of providing such a showing, the Applicants lay principal stress on their commitment to meet NRC requirements "concerning the safe handling of heavy loads, including measures dealing with safe load paths, procedures, operator training and crane inspections, testing, and maintenance." The Applicants go on to say that "Palmetto Alliance has failed to state why it believes Applicants will be unable to promulgate acceptable procedures." It seems clear that the Applicants are using the summary disposition process in a manner prohibited by controlling law. Invoking the Circuit Court ruling in United States v. Dibble, 429 F2D 598,601(9th Cir. 1970), the Appeal Board in Perry, supra stated that a "summary judgement is neither a method of avoiding the necessity of proving one's case nor a clever procedural gambit whereby a claimant can shift to his adversary his burden of proof on one or more issues."

Applicants seem to claim that it is incumbent upon the Intervenors to establish why the Applicants will not meet their commitments. Having failed to write specific procedures for dealing with spent fuel casks that would enable Intervenors to digest and thoroughly review "genuine issues of material fact," the Applicants shift to the Intervenor the burden of evaluating the credibility of their commitment to write such

procedures. Even if this were a proper burden, and it is not, the Board, at the insistence of the Applicants, has disallowed attempts by the Intervenor to show that Duke Power Company's poor track record (contention 7) and lack of the sufficient hands-on experience (contention 8) provide no reasonable assurance that the facility can be operated without endangering the public health and safety.

Even without access to written procedures which Palmetto Alliance can evaluate we believe that genuine issues with regard to cask and fuel handling have been raised. It is equally important however, that it be understood that it is entirely inappropriate to place on the Intervenors the burden of demonstrating the Applicants' lack of commitment., especially when Board decisions preclude likely avenues for such an effort. What is at issue here is not commitments but genuine issues of material fact.

It seems clear that the fact Duke Power Company has lit e experience handling the large number of casks called for by the cascade plan and that they have yet to provide written procedures for how they intend to deal with this unique plan is sufficient to cause "reasonable minds to inquire further" and to require that the motion for summary disposition be rejected.

While Mr. Tuckman is in his affidavit contends that

applicants are "already familiar" with the procedures that will be used at Catawba and that "applicants have had considerable experience in unloading and storing Oconee spent fuel at the McGuire plant" (Applicant Motiion, Affidavit of Michael Tuckman, point 3, at p. 2.), the fact is that the Duke cascade plan is a unique proposal that requires a volume and type of cask handling that Duke has no experience with. Whereas the cascade plan calls for 300 shipments per year Duke has, to date, shipped less than 30 casks from the Oconee plant to the McGuire plant for storage as of April 23, 1983. It is erroneous to suggest that this experience, let alone the experience in "transferring Oconee spent fuel from one spent fuel pool to another during reracking activities" (Id.), is sufficient to remove any uncertainty about Duke's abililty to safely handle and store spent fuel -- especially when no written procedures to implement this unique cascade plan exist.

The confusion on the part of Mr. Tuckman regarding cask lid removal (Applicants Motion, Tuckman Affidavit, point 16, at p. 7.), far from removing an issue of material fact, buttresses intervenors claims that significant issues remain with respect to cask handlilng. With no written procedures and vague plans that are only made explicit in reponse to specific alegations on questions by Palmetto Alliance, it is impossible to confidently assert that no genuine issues arise with respect to the implementation of a new and unigue spent fuel shipment, handling,

and storage plan.

Palmetto Alliance contends that the Applicant's have not only failed to remove cask handling as an issue to be litigated but have so far failed to 1.) articulate implementation policies and procedures that reflect "every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as reasonably achievable" (10 CFR 20.1) or 2.) provide reasonable assurance that storing irradiated fuel assemblies from other Duke Nuclear facilities can be done without endangering the health and safety of the public.

Specifically with regard to cask-drop accidents we deny the applicant claim that such an accident is physically impossible and seeking to offer expert analysis and opinion on this point (See attached Guild affidavit)

Taken together, the Applicants and the Staff offer three basic reasons for disregarding Palmettos concern about the potential for external threats such as aircraft crashes to the Catawba spent fuel pool and the exacerbation of public health and safety concerns due to the expansion of the Catawba pool to accomodate Oconee and McGuire fuel: 1) the Board's rulings bar Palmetto from raising the matter 2) aircraft crashes are not encompassed by GDC 2 or 4 as Intervenors allege, and 3) the FSAR and SER evaluations of aircraft crashes shows that there is

no significant risk of such a crash. Intervenors dispute all three of these claims.

First, the Staff and Applicants interpret the Boards rejection of DES-16 as barring all consideration of aircraft crashes, but the Board's December 1, 1982 ruling rejects a contention based on aircraft hazards as untimely which says little about the admissability of aircraft crash hazards as evidence in another contention. Further the Staff's argument that "only matters arising as a direct consequence of the proposal to store Oconee and McGuire spent fuel at Catawba are within the scope of contention 16, and that external threats such as from aircraft are clearly outside that scope" (staff Motion at p. 4) is surely defiecient. By this logic, to take an example, one would find that whether or not a small movie theater contained 10 persons or 1,000 persons was irrelevant to the health and safety of those persons in the event of a fire, since the number of movie-goers does not increase or decrease the probability of fire. Fire codes that provide for maximum capaciteis in public buiildings recognize the folly of this logic and so should the NRC. When the amount of highly radioactive potentially dangerous, fuel assembklies is more than double at a spot where there are three airports within 13 miles this has clear significance for the public health and safety.

Second, Palmetto Alliance takes issue with the

Applicants assertion that GDC 2 and GDC 4 do not require consideration of aircraft crashes. GDC 4 is especially clear in its requirement that

> structures, systems, and components shall be appropriately protected against dynamic effects, including the effects of missles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit.

See 10 CFR, Appendix B, Criterion 4.

Interestingly the Staff does not contend that GDC 2 and GDC 4 do not encompass aircraft crashes.

Finally, Palmetto Alliance asserts that neither the Applicants FSAR nor the Staff's SER adequately satisfies significant concerns regarding aircraft crashes. The FSAR shows that 3 airports are within the vicinity of the Catawba Station. Two of these airports--the Rock Hill Airport and Douglas Airport--will account for over 3,275 flights per year in the vicinity of the Catawba station (FSAR Section 2.2.2.5 and 2.2.3.1.3). It appears that one of the runways at Douglas Airport implies a flight path directly over the site and neither the FSAR (Section 2.2.2.5) nor the SER (Section 7.2.3.1.3) addresses the problem of morning fog, acknowledged to be a problem at the site that is exacerbated by the Catawba Station's releases of waste heat and water vapor (as documented by the staff, see DES 5-6).Further, without detailed documentation it is

difficult to fully evaluate the adequacy of the probability calculation performed by staff and applicants that indicates that the probability of an aircraft crash is`10-7. Further, as the Licensing Board in the Big Rock Point case recognized, the probability calculation is not the beginning and the end of the issue. In the Big Rock Point case on analysis found that the risk of accident resulting from a military training route was less than one in a hundred million and yet the Board found the analysis as not being beyond geniune dispute due to a variety of facts and circumstances not dealt with by the analysis. Palmetto believes an ananalogous situation exist with respect to Contention 16 in this proceeding.

For all of the foregoing reasons Palmetto requests that the Board reject Applicant and Staffs Motion for Summary Dispositioin on Contention 16.

DES CONTENTION 19

MATERIAL FACTS AS TO WHICH THERE IS A GENUINE ISSUE TO BE HEARD

1. In admitting DES Contention 19, the Licensing Board stated, "(T)he Board underatnads in admitting it that the primary focus of DES 19 would be on the environmental effects of routine releases from such transhipped fuel during normal operations at Catawba. Although the contention literally extends to environmental effects of severe accidents, there would be no reason to consider such effects unless it were first shown that severe accidents are credible in the spent fuel pool design for Catawba." Memorandum and Order, february 25, 1983, at p. 9.

2. In the DES and FES, the Staff failed to adequately analyze the environmental costs attributable to the storage of spent fuel including spent fuel from Oconee and McGuire.

3. Tables D.1 and D.4 of the FES do not adequately include releas es from spent fuel from Catawba and the spent fuel expected to be stored at Catawba from Oconee and McGuire.

4. In the FES the Staff failed to adequately demonstrate that releases of radioactive materials from fuel stored in the Catawba spent fuel storage facility (SFSF) will be small fractions of the total releases from normal operations of the entire facility.

5. Staff has failed to adequately demonstrate that dose commitments to a maximally exposed individual and to the population from oper-

ating Catawba, provided in Tables D.6, D.7, D.8 of the FES, included exposure to releases from the storage at Catawba of spent fuel from Catawba, Oconee, and McGuire.

6. Staff failed to adequately evaluate estimates of doses to workers from normal handling of spent fuel casks from Oconee and McGuire at Section 5.9.3.1.2 of the FES.

7. The Staff erroneously estimates doses to individual members of the public and to the general population fromexposure to effluents fromthe SFSF to be very small fractions of the estimated dose and exposure to all effluents.

8. The Staff erroneously estimated doses to individual members of the public and to the general population from exposure to all effluents from the facility to be a very small fractions of the annual doses from exposure to background radiation.

9. The Staff has failed to demonatrate that storage of spent fuel from Oconee and McGuire which is at least five years out of core does not alter the calculation of routine releases from the SFSF.

10. The Staff failed to adequately review the mechanisms by which volatile and non-volatile radioactive materials are released into the spent fuel pool water.

11. The Staff has failed to demonstrate that after five years storage there is little contamination of the SFSF from material on the surface of spent fuel assemblies.

12. The Staff has failed to adequately demonstrate that after five

years out of core the contribution of radioactive materials due to defects on fuel cladding would be undetectable.

13. Staff has failed to demonstrate that with respect to volatile fission products after four to six months out of core there is no signifiicant release of volatile fission products from fuel assemblies.

15. The Staff has failed to adequately demonstrate that the only significant noble gas nuclide attributable to long term fuel assembly storage would be Kr-85 , which is at undetectable concentrations in the plant effluent after two years out of core.

16. The Staff has failed to adequately demonstrate that the proposal for storage of Oconee and McGuire fuel in the SFSF does not result in significant amounts of radioactive materials being routinely transferred to pool water.

17. The Staff has failed to adequately demonstrate that there is essentially no liquid releases from the SFSF, since it is a closed recirculation treatment system.

18. The Staff has failed to demonstrate that disposal of solid waste from the SFSF is accounted for by the generic values in Table S-3, 10 CFR 51,20.

19. The Staff has failed to demonstrate that Oconee and McGuire fuel storage would not release significant amounts of radioactive materials, to demonstrate that the solid waste generated by such storage would increase by six cubic feet per year per unit, but such waste introduces no environmental impact not otherwise

considered in the FES.

20. The staff has failed to adequately demonstrate that there would be no measurable releases of noble gases in the plant effluent.

21. The staff has failed to adequately demonstrate that the maximum routine release of Krypton-85 would be less than 1 curie per year.

22. The staff has failed to adequately demonstrate that based on this one curie/year per unit estimate for Krypton-85 that the total body and skin of a maximally exposed individual would be less than .1 millirem/year.

23. The staff has failed to adequately demonstrate that the total body dose to the estimated within a fifteen mile radius of Catawba due to normal operations of the SFSF, assuming the Mcguire and Oconee fuel assemblies are stored there is less than .1 man-rem/yr.

24. The staff has failed to adequately demonstrate that normal operations of the SFSF including the storage of Oconee and McGuire fuel, will not have a significant impact on exposures off-site.

25. Staff has failed to demonstrate adequately that the Oconee and McGuire fuel assemblies tobe stored at Catawba would not significantly contribute to the contamination of the Catawba SFSF pool water or to occupational doses.

26. Staff has failed to adequately domonstrate that normal fuel handling operations in the fuel handling building will result in an average total body dose of about 1.5 person-rems per year per unit.

27. Staff has failed to adequately demonstrate that additional handling of additional spent fuel of Oconee and McGuire will result in a total body dose to workers of 0.029 person-rem per spent fuel shipment, or 8.7 person-rem per year for the maximum number of shipments proposed--300.

28. Staff has failed to adequately demonstrate that the total yearly occupational dose attributable to all anticipated fuel handling operations is a small fraction of the total occupational dose for the Catawba facility.

29. Staff has failed to adequately demonstrate that the environmental impact of storing spent fuel at Catawba has been fully evaluated, including the operation of Catawba SFSF as a storage facility for spent fuel from Oconee and McGuire.

30. Staff has failed to adequately demonstrate their conclusions that: a) the releases of radioactive material from fuel stored at Catawba, including fuel from Oconee and McGuire are estimated to be very small fractions of the total releases from normal operations at Catawba; b) the Catawba effluent treatment systems as now designed and built are capable of controlling effluent released including releases from storage, spent fuel from Oconee and McGuire to meet the dose design objectives of Appendix I, to 10 CFR 50; c) The dosage to individual members of the public and members of the general population exposed to effluents from fuels stored at Catawba are very small fractions of the annual doses from background radiation; d) Occupational doses to spent fuel handling and storage operations, including handling and storage of spent fuel received from McGuire are a small fraction of the

total worker dose for the Catawba facility; e) As a result of proposed operation of the Catawba SFSF has been fully evaluated to receipt and storage of Oconee and McGuire spent fuel, and found to have a small impact on the environment.

31. Staff has failed to adequately demonstrate that the five-year-old spent fuel stored at Catawba (from Oconee and McGuire) will not cause any detrimental environmental impact because the Catawba spent fuel pool has been designed to prevent the escape of the more radioactive Catawba spent fuel.

32. Applicant's witness A.L. Snow fails to adequately demonstrate that the storage of spent fuel at Catawba including Oconee and McGuire spent fuel will have an insignificant impact on the environment.

ARGUMENT

Intervenors assert that neither the Applicants nor the Staff's Motions for Summary Disposition should be granted. The NRC Staff does not meet its evidentiary burden with respect to the existence of material facts and the Applicant's Motion not only fails to shoulder this burden but reveals an abuse of the summary judgement process.

The Applicants make their case for summary judgement on three grounds: 1) the Intervenors' concern with severe accidents is beyond the scope of the contention admitted by the Board; 2) Intervenors' "admission" that there is no difference between Catawba and Oconee/McGuire spent fuel is somehow fatal to Contention 19, and 3) the DES/FES conclusion that the "... contribution of the spent fuel pool (from Catawba spent fuel, as well as Oconee and McGuire spent fuel contributions) to the routine release is insignificant." (Motion at p.9).

With respect to the first charge, the Applicants simply (and seemingly deliberately) misread the Board's understanding of the contention. As noted by the Applicants the Board reflected that

> The Board understands in admitting it that the primary focus of DES-19 would be in the environmental effects of routine releases from such transshipped fuel during normal operations at Catawba. Although the contention literally extends to environmental effects of severe accidents, there would be no reason to consider such effect unless it were first shown that severe accidents are credible in the spent fuel pool designed for Catawba. [emphasis added]

Quoted by Applicants p. 1 Motion, from Memorandum and Order of February 25, 1983 at p. 8. Somehow the Applicants interpret this to mean that the accidents are "beyond the scope of the admitted contention" and that the Intervenors concerns expressed in interrogatory responses are unrelated to the incremental environmental impact associated with routine releases from Oconee and McGuire spent fuel stored at Catawba" (Applicants Motion at p. 4). But the Board's statement is a conditional statement. Accident scenarios are within the scope of DES-19 as long as credible accident scenarios are raised. Contrary to the NRC Staffs allegation that Intervenors have made no attempt to demonstrate that such accidents in the Catawba spent fuel pool are credible, Palmetto Alliance has to this point raised a number of accident scenarios made more likely by the massive increase in the amount of spent fuel to be handled and stored at the Catawba facility including: improper removal of the cask lid, improper handling of casks and the criticality risks of a cask dropping into the spent fuel pool, the rapid increases in pool water temperature in the event of cooling train failures on loss of onsite/offsite power, and external threat to

the spent fuel pool such as aircraft crashes. Palmetto Alliance plans to offer expert testimony to further demonstrate that these scenarios are credible. But Intervenors cannot do so if the Board grants the Applicants' and Staffs' Motions for Summary Disposition. Neither the staff's nor the applicants' affiants address the subject of accidents. Granting these Motions on the basis of the Applicants' peculiar interpretation of the Boards conditional statement with respect to accident scenarios and DES-19 would be inappropriate.

The Applicants second charge is a bit of gamesmanship that should not be allowed by this Board. Intervenors in response to numerous and repetitive interrogatories, consistently stated that our contention with regard to Duke's cascade plan was not that there were some unique properties of Oconee/McGuire spent fuel that raised dangers. Rather, we stated the obvious that the origin of the fuel mattered only because Duke had specified that it was shipments from Oconee/McGuire that (at the very least) would more than double (or quintuple) the amount of spent fuel handled and stored at Catawba.

Instead of squarely addressing the issue of this expanded inventory and heat load and despite the fact that Duke's own Heat Load Study documents a much higher heat load in the Catawba pool, the Applicants refer to the "alleged" increased heat load, and arrogantly attempt some slight of hand.

It was Duke Power Company which created the so-called cascade plan that called for the storage of Catawba, Oconee, and McGuire spent fuel. Palmetto Alliance made clear that its concerns related to the increased inventory and heat load this plan represented [See appended Motion for Sanctions.] In this context Intervenors were asked if we contended that the DES/FES failed to evaluate the storage of Catawba spent fuel. We replied "No," attempting once again to be clear that our concern related to the expanded pool design that would handle Oconee and McGuire and Catawba spent fuel. The Applicants then seize on this response to deny--in the face of Palmetto's explicit responses to interrogatories--that Intervenors have raised a concern at all.

> ...if the Catawba spent fuel pools could be filled with spent fuel from Catawba only (which spent fuel Intervenors acknowledge is no different from Oconee and McGuire spent fuel) then, Intervenors' concern with the Catawba spent fuel pools being filled up with Oconee and McGuire spent fuel must be viewed as being enveloped by the environmental evaluation of the storage of Catawba spent fuel. In this regard, Intervenors have stated that they do not contest the environmental evaluation conducted on the storage of Catawba spent fuel: therefore, nothing remains to be litigated. Applicants Motion at p. 6.

As we note in the accompanying Motion for Sanctions this level of gamesmanship should not be allowed in these proceedings.

Beyond efforts to narrowly and unreasonably construe Palmetto responses and contentions (effort which The Board warned applicants about in their December 22, 1982 Memorandum and Order, See attached Motion for Sanctions) the Applicants Motion for Summary Disposition on this contention offers no substantive reason why summary judgement should be granted. Rather than addressing the validity of the DES/FES "evaluation" of the environmental effects of the cascade plan the applicants offer no new information or analysis and merely repeat their position that the FES conclusion is correct. The insubstantial basis for this conclusion is apparent inasmuch as the applicants aver that "the FES does not contain voluminous reference to this matter does not render its treatment deficient" (Applicant Motion at p. 8).

In this instance the Applicants characterization is basically correct, although incomplete. Not only is the FES "not voluminous" but it is clearly defecient. The Staff's "evaluation" in the FES largely consists of conclusions that offer no real analysis or supporting documentation (see p. 9-12 and 9-13 of the FES) and extensive citations to general NRC documents such as NUREG 0575 that are not evaluations of what is at issue in this contention--the environmental effects of Duke's spent fuel handling and storage plan as amended by the cascade plan. (See pp 9-7 and 9-8 of FES).

Perhaps the most telling evidence of the inadequacy of the

FES is the exhaustive nature of the NRC Staff's affidavits of Messrs. Branagan, Serbu, and Boegli. The affiants hold forth for 16 pages explaining, expanding on, and supplementing the original FES evaluation. Now on the face of it this rather voluminous defense is suspect in such bald assertions as

> There are estimated to be essentially no liquid releases for the SFSF since it is a closed recirculation and treatment system. Therefore, radioactive materials in liquid effluents calculated for the FES and the SER for Catawba Unit Nos. 1 and 2 did not include SFSF releases and the proposal to store fuel assemblies from McGuire and Oconee would not change this conclusion.

Affidavit of J. S. Boegli, E. Branagan, and J. Serbu at p.9.

The supplementary nature of the affidavits entitles Palmetto Alliance some reasonable opportunity to retain an expert in these matters to review the Branagan, Serbu, and Boegli affidavit (See attached affidavit of Robert Guild). But further, and holding the legitimacy of the NRC Staff affidavit in abeyance, providing evidence and analysis that should have been provided within the FES in affidavit form as a device to have contentions summarily disposed of is clearly inappropiate to a fair licensing process. Ultimately, the DES/FES is modified by any final decisions of this Board, but to allow the DES/FES to be bootstrapped by post hoc analysis at the summary disposition stage is an abuse of the summary disposition procedure and the locensing process itself. If the Staff wishes to acknowledge the deficiency of the DES/FES then the information provided by

Messrs. Branagan, Serbu, and Boegli should be published as a supplement to the FES and circulated for public comment.

As the Board considers whether or not the Applicants have established that there are no genuine issues of material fact, with regard to Contention 19 Intervenors urge the Board to consider not only the specific points raised above (that we believe show that Applicants and Staff have not met their evidentiary burden) but also a more accurate characterization of spent fuel technology than that presented by the Applicants and Staff. The summary of spent fuel technology made by the NRC and cited by the applicants provides an extremely unstable mooring for claims about the "insignificance of spent fuel storage for the public health and safety." The passage of the FES (taken from NUREG/0575) cited by the Applicant says that:

> The storage of spent fuel in water pools is a well established technology, and under the static conditions of storage represents a low environmental impact and low potential risk to the health and safety for the public. It makes little difference whether spent fuel is stored at a nuclear power plant or in an independent away-from-reactor facility designed for this purpose. This conclusion is based on existing water pool storage technology

Applicants Motion at p. 7.

First of all, any fair reading of the history of spent fuel storage reveals a pattern of successive, post hoc, limited responses to an increasingly severe problem. Far from a

"well-established technology," the storage of spent fuel in reactor pools was an option "chosen" by default. Originally designed for temporary storage of a limited number of fuel assemblies prior to reprocessing, long term storage in spent fuel pools is a hastily conceived technology being stretched to, and perhaps beyond, its limits. The United States Congress was sufficiently concerned with this "well established technology" to note that "a national problem has been created by the accumulation of spent nuclear fuels from nuclear reactors . . ." (Nuclear Waste Policy Act of 1982, Section 111).

Secondly, the above passage claims only that there is low environmental impact and low potential risk to the public health and safety "under static conditions". Clearly, conditions are anything but static, especially with Duke's proposed cascade plan in the offing. The Board has prevented Intervenors from addressing some of the more important dynamic and unstable aspects of spent fuel storage, such as highway transportation of fuel casks. But within the scope of contention 19 Intervenors have raised serious issues of fact with respect to the Applicants ability to safely handle and store the expanded inventory proposed under Duke's cascade plan. This fact is not changed by misrepresenting an infant and troubled technology as "well-established" or by dissolving the entire process of spent fuel storage into fuel rods sitting under water.

Finally, a more accurate appreciation of spent fuel storage technology demands not only recognition of serious environmental

and safety risks but also brings attention to the seriousness of accident consequences. There is very little disagreement that the affect of an accident in or near a spent fuel pool could be extremely serious. Consequently, we urge the Board to note the Appeal Board's decision in the North Anna case to the effect that with respect to specific issues where the burden is one of persuasion, the magnitude of the burden upon a litigant who shoulders the burden in the first instance should be influenced by the gravity of the matter in controversy. (See Virginia Electric and Power Company (North Anna Power Station ALAB 256, 1 NRC 10, 17, n.18.)) We again urge that Applicants' and Staffs Motions for Summary Disposition be denied and that Intervenors attached Motion for Sanctions be granted.