December 13, 1982

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)	)	

NRC STAFF POSITION ON APPLICABILITY OF TABLE S-4 TO TRANSSHIPMENT OF SPENT FUEL FROM OCONEE AND MCGUIRE TO CATAWBA

I. INTRODUCTION

In the Licensing Board's Memorandum and Order of December 1, 1982, the Licensing Board granted Applicants' Motion to Defer Ruling on Palmetto Alliance and Carolina Environmental Study Group's New Contentions Concerning Transportation of Spent Fuel (No. 10 and 19) and to Provide Parties an Opportunity to File Statements of Position, and allowed 10 days for submission of the parties' positions on the applicability of Table S-4 to the environmental impact of transporting Oconee and McGuire spent fuel to Catawba. The Staff's position follows.

II. DISCUSSION

A. Background

As Applicants note, when Palmetto Alliance, through its original proposed Contention 14, attempted to require a full and detailed analysis of the environmental effects of transportation of spent fuel from other Duke facilities to Catawba, the Staff countered that Table S-4 applies "to the environmental impacts of spent fuel transportation"

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and litigation of these impacts "outside summary Table S-4 would be an impermissible challenge to Commission regulation."[1/] Applicants took a similar position, stating, in part, "Table S-4 addresses the environmental effects of, inter alia, transportation of spent fuel under certain prescribed technical conditions . . . transportation related issues that fall within the technical scope of Table S-4 have already been resolved [and] are not subject to relitigation in individual licensing proceedings."[2/]

The Licensing Board agreed, "disallowing Contention 14 because, as we read it, it seeks to avoid application of the Table S-4 values about transportation impacts solely on the ground that the spent fuel would be destined for the Catawba storage pool, instead of the hypothetical reprocessing plant referred to in the Table S-4 rule (10 CFR 51.20(g)(1))." The Board noted that no basis for making such a distinction had been offered and concluded that the impacts "would be substantially the same and therefore that the Table S-4 values would apply."[3/]

Notwithstanding its position on the admissibility of Contention 14, the Staff issued a draft "Environmental Impact Appraisal for Transshipment of Spent Fuel From Oconee and McGuire to Catawba Nuclear Station" as Appendix G to the Draft Environmental Statement for

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1/ NRC Staff Response to Supplemental Statement of Contentions by Petitioners to Intervene, December 30, 1981, p. 20.

2/ Applicants' Response to Contentions Filed By Palmetto Alliance, December 20, 1981, pp. 59-60.

3/ Board Order, March 5, 1982, p. 19. The Board reiterated its conclusion in its July 8, 1982 Order, p. 6.

Catawba, NUREG-0921, in which the Staff undertook to evaluate the environmental impacts of spent fuel transshipment, without relying upon Table S-4. Palmetto Alliance and CESG thereafter filed their joint contentions assertedly based on the DES, including new contentions 10 and 19, challenging the adequacy of Staff analysis of the environmental consequences of spent fuel transshipment.[4/] Both the Staff and Applicants opposed admission of these contentions in responsive pleadings served October 4, 1982.[5/]

At the second prehearing conference, the Staff informed the Board that it had not relied upon Table S-4 for its evaluation of the environmental impact of the proposed transshipment of Oconee and McGuire spent fuel to Catawba because the number of proposed spent fuel transshipments was significantly greater than assumed in Table S-4. Record Transcript (R. Tr.) 575. However, by letter of November 2, 1982 from H. B. Tucker, of Duke Power Company, to H. R. Denton, Director, Office of Nuclear Reactor Regulation, USNRC, Duke stated its intention

> "that any such shipments will be made so that 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. This is consistent with the assumptions used in WASH-1238, "Environmental Survey of Transportation of Radioactive Materials to and from Nuclear Power Plants."

4/ Palmetto Alliance and Carolina Environmental Study Group Supplement to Petitions to Intervene Regarding Draft Environmental Statement, September 22, 1982, pp. 7, 11.

5/ NRC Staff Statement of Position on Draft Environmental Statement Contentions, pp. 12, 23-24; and Applicants' Response to Supplement to Petitions to Intervene Filed by Palmetto Alliance and Carolina Environmental Study Group, pp. 34-36, 55-58.

B. Table S-4 Applies Irrespective of Whether Reprocessing Plants Are in Fact the Destination of the Spent Fuel

10 CFR Section 51.20(g) deals with the manner in which the environmental impacts from transshipment of fuel are to be considered in licensing power reactors, and provides that, if certain conditions are met, such environmental impacts are to be determined based on Table S-4. Section 51.20(g) refers to reprocessing plants as the destination of spent fuel for which Table S-4 impact values are applicable, raising the question whether the rule applies where the destination of transshipped irradiated fuel is not a reprocessing plant.[6/]

A careful examination of the Commission's Statement of Considerations on the rule indicates that although a reprocessing facility was assumed to be the ultimate destination of irradiated fuel, this assumption had no impact on the Commission's evaluation of the Staff's analysis[7/] performed in support of the rule. 40 Fed. Reg. 1005. The analysis itself, WASH-1238, is "a general analysis of the impact on the environment from the transportation of nuclear fuel and solid radioactive wastes to and from a light-water-cooled nuclear power reactor. . . ." WASH-1238, at 3. The ultimate destination appears to have been considered immaterial, except for the purpose of estimating the average distance of irradiated fuel transport -- 1000 miles -- and making assumptions about feasible methods for transport. Id. at 38.

6/ As noted above, the Licensing Board here ruled, in connection with its rejection of original Palmetto Alliance Contention 14, that the provision applied even where a reprocessing facility was not the intended destination of the spent fuel.

7/ "Environmental Survey of Transportation of Radioactive Materials to and from Nuclear Power Plants," WASH-1238, December 1972.

Thus, the impacts from transshipment flow from the distances and methods of transport, not from the destination. Moreover, "in plant" radiological aspects of transportation of radioactive materials were not included in the analysis at all. Id. at 43-44, 53. What was considered important in determining the applicability of the rule was not the nature of the destination of the transshipped fuel but, rather, whether the generic assumptions used in deriving the impact values in Table S-4 are applicable to, or at least bound, the fuel transshipment in question.8/

Further, in administering the rule, the unavailability of reprocessing facilities as possible destinations had no impact on the Staff's evaluation of environmental impacts of fuel transshipment.9/ Thus, while the language of the rule refers to a reprocessing plant as the destination for spent fuel, the rule was formulated without attributing any significance to the nature of the fuel's destination, and has been applied despite the former bar against reprocessing.

8/ Thus, in discussing the scope of the rule, the Commission indicated that exceptions to application of the rule might be sought where "transportation involves distances, population exposures, accident probabilities or other factors which are much greater than those discussed and analyzed in [WASH-1238] or which are not accounted for in [WASH-1238]." 40 Fed. Reg. 1005.

9/ A review of environmental impact statements issued during the period following the 1977 Presidential suspension of spent fuel reprocessing reveals that the unavailability of reprocessing had no impact on the application of Section 51.20(g). See, e.g., NUREG-0490, DES for Operation of San Onofre Nuclear Generating Station, November 1978, pp. 34-35; and NUREG-0512, FES for Greene County Nuclear Power Plant, January 1979, p. 7-4.

It is fair to conclude, then, that Section 51.20(g) applies to spent fuel transportation generally. The Staff therefore believes that the destination of spent fuel need only be considered insofar as it bears on parameters which were factored into the WASH-1238 survey and the resulting values in Table S-4.

C. Table S-4 Applies to the Transportation of Spent Fuel for Interim Storage

Since the ultimate destination is not, by itself, determinative of the applicability of Table S-4, the question arises as to relevance to the applicability of Table S-4 of the fact that spent fuel may be stored on an interim basis, for example, at Catawba, and then further transshipped. The language of Section 51.20(g) and the Commission's Statement of Considerations suggests that the introduction of interim storage does not affect the applicability of Table S-4 to the transportation of spent fuel generated at the Oconee and McGuire facilities. First, Section 51.20(g) stipulates only that the requirements listed in subparagraph (2) be met in order for the transshipment in question to fall within the scope of the rule. The route chosen for transshipment is not a factor considered. Second, the Statement of Considerations, as noted above, contemplates that Table S-4 applies even where the transshipment in question deviates from the assumptions in WASH-1238, unless an exception to such applicability is appropriately sought:

> The Commission is cognizant of the fact that there may occasionally arise a situation where transportation of fuel and waste for a particular reactor falls within the scope of the rule, but the transportation involves distances, population exposures, accident

> probabilities, or other factors which are much greater than those discussed and analyzed in the Survey or which are not accounted for in the Survey. In such an instance, parties to a reactor licensing proceeding have available to them the provisions of 10 CFR § 2.758 which provides, in part, that the Commission, upon a showing of special circumstances such as those mentioned above, may waive the application of a rule in a particular proceeding. 40 Fed. Reg. 1005.

This, of course, is consistent with the purpose of the rule, which is to provide overall generic values for the environmental impact of fuel and waste transport for use in individual licensing proceedings.

It follows, therefore, that in order for a party in an individual licensing proceeding to use values other than those stipulated in Table S-4, it must make the showing required by Section 2.758, and a waiver may be made only by the Commission. Cf. Metropolitan Edison Company, et al., (Three Mile Island Nuclear Station, Unit No. 2), CLI-78-3, 7 NRC 307, 309 (1978). Thus, in a case such as this, where the action under consideration falls within the scope of Section 51.20(g)(2), if Intervenors believe that the transshipment to Catawba for interim storage of Oconee or McGuire spent fuel would result in environmental impacts greater than those attributable to transportation of Oconee and McGuire spent fuel by virtue of Table S-4, they must make a prima facie showing "that the application of the specific Commission rule or regulation or provision thereof to a particular aspect or aspects of the subject matter of the proceeding would not serve the purposes for which the rule or regulation was adopted and that application of the rule or regulation should be waived or an exception granted. . . ." 10 CFR Section 2.758(c).

D. Environmental Impacts of Oconee and McGuire Fuel Transportation Were Considered at the Time Oconee and McGuire Were Licensed, and the Catawba Board Need Consider Only New Environmental Impacts Arising from this Application

Although it is reasonable to conclude that Table S-4 applies to the transport of a reactor's spent fuel generally, Section 51.20(g) contemplates that Table S-4 will be used in assessing the environmental impact of licensing the facility that generates the spent fuel.[10/] The Licensing Board in this case earlier raised the question whether the transportation of spent fuel generated at other reactors to Catawba is within the Board's jurisdiction. The Staff argued, and the Board agreed that, the authority to transport the Oconee and McGuire spent fuel to an authorized receiver was not a proper subject of the Catawba proceeding, since such authority had already been granted by virtue of the operating licenses issued to the Oconee and McGuire facilities. On the other hand, the Staff argued that the Board had jurisdiction to consider the environmental impacts related to spent fuel transshipment "that fairly arise from Duke's request to receive and store such spent fuel at Catawba."[11/] NRC Staff Response to

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10/ The first clause of Section 51.20(g)(1) makes clear that the environmental impacts of the transshipment of fuel are to be evaluated in the initial licensing of the utilization facility which will use or produce the fuel to be transshiped. Thus Section 51.20(g) addresses the environmental impact of both new and spent fuel transportation from the perspective of the utilization facility using new fuel and needing to dispose of irradiated fuel, and not necessarily from the perspective of the facility to which irradiated fuel is transported.

11/ Examples of impacts that arise from any authorization to receive and store spent fuel from other reactors at Catawba would be the impacts from handling such spent fuel at the Catawba site and the direct impacts from the actual storage of such fuel in the Catawba spent fuel pool.

Board Questions on Spent Fuel Storage and Operator Qualifications, April 5, 1982, p. 16. In its July 8, 1982 Order, the Board did not discuss this question directly, and the Staff response did not state whether it considered transportation impacts already considered in the licensing of the Oconee or McGuire facilities to be excluded from consideration in the Catawba licensing. The Catawba Board should not consider environmental impacts of spent fuel transportation which have already been considered in either the Oconee or McGuire dockets, since to again consider and account for environmental impacts that were previously considered and factored into the NEPA cost-benefit analysis for other facilities would constitute a double counting of the same impacts. See also, Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 46 n. 4 (1978).12/

On the other hand, it would be appropriate under NEPA to consider in the Catawba proceeding environmental impacts of fuel transportation which would not arise, but for the application to store Oconee and McGuire spent fuel at Catawba. To identify such impacts, the spent fuel transshipment impacts already considered in the licensing of McGuire and Oconee are pertinent. For McGuire, Table S-4 was applied in the FES at the operating license stage. See NUREG-0063, Final Environmental Statement related to operation of William B. McGuire Nuclear Station,

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12/ In Prairie Island, the Appeal Board stated:

> "Nothing in NEPA or in those judicial decisions to which our attention has been directed dictates that the same ground be wholly replowed in connection with a proposed amendment to [operating licenses for which a full environmental review was conducted.]" 7 NRC at 46, n. 4.

Units 1 and 2, Duke Power Company, April 1976, Docket Nos. 50-369, 50-390, at pp. 5-34, 5-35. Since environmental impacts of McGuire spent fuel transportation were considered on that docket (applying Table S-4), those impacts already considered need not and ought not to be considered again in the licensing of Catawba. The sole exception to this would be where special circumstances could be demonstrated, pursuant to a Section 2.758 petition, such that application of Table S-4 values would not serve the purpose for which it was adopted warranting a waiver of Table S-4 under 10 CFR § 2.758.[13/] For Oconee, which was licensed prior to the adoption of Section 51.20(g) and Table S-4 in 1975, a site-specific analysis of fuel transportation impacts was performed. Final Environmental Statement related to Operation of Oconee Nuclear Station, Units 1, 2 and 3, Duke Power Company Docket Nos. 50-269, 50-270, 50-287, March 1972. Nevertheless, the environmental impacts of spent fuel transportation were considered

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13/ Thus, in Allied-General Nuclear Services, et al. (Barnwell Fuel Receiving and Storage Station), LBP-76-24, 3 NRC 725, 734-735 (1976), a contention attempted to require the Staff to specifically address, in analyzing the environmental impacts of authorizing receipt of spent fuel at the Barnwell receiving facility, the environmental impacts of railroad accidents in spent fuel transshipment. The Licensing Board rejected the contention based on Table S-4:

> The matters asserted in this contention are outside the scope of the present proceeding which concerns only a separately operable fuel stroage facility. The contention presents an issue already included in a generic environmental statement (WASH-1238) and codified in the regulations under Table S-4 to 10 CFR Part 51. Under 10 CFR § 2.758, Joint Intervenors can challenge the information contained in Table S-4, but must show that special circumstances exist for considering such a challenge in a discrete proceeding. Joint Intervenors have not shown such circumstances.

on the Oconee docket.[14/] Such impacts need not and ought not be considered again in the licensing of Catawba. In order to reconsider here the environment impacts of fuel transshipment determined in the Oconee proceeding, a showing must be made that new intervening circumstances arising from the Catawba application bring into question the validity of the environmental impacts already determined for fuel transport when Oconee was licensed.[15/]

E. Intervenor Contentions 10 and 19 Do Not Raise Environmental Considerations Warranting Reevaluation of the Fuel Shipment Environmental Impacts Considered When the Oconee and McGuire Facilities Were Originally Licensed

Since the Licensing Board's jurisdiction over environmental impacts of the transportation of Oconee and McGuire spent fuel is limited to environmental issues peculiarly raised by Applicant's proposal to store such spent fuel at Catawba, it follows that the Board should not

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14/ The environmental impacts of transshipment of spent fuel were reconsidered in the Oconee-McGuire proceeding wherein Duke sought a license amendment for McGuire that would allow the storage of Oconee spent fuel at the McGuire facility. See Duke Power Company (Amendment to Materials License SNM-1773 -- Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-651, 14 NRC 307, at 309 (1981). That Duke proposal entailed a substantially greater number of annual spent fuel shipments from Oconee (300 for 3 Oconee units) than had been assumed in the environmental analysis of spent fuel shipments performed when Oconee was originally licensed (about 90 shipments for 3 Oconee units - see Final Environmental Statement related to Operation of Oconee Nuclear Station, Units 1, 2 and 3, at p. 145).

15/ If, indeed, new intervening circumstances justifying a reconsideration of Oconee transshipment impacts because of the Catawba application are shown, it is the Staff's view that the Table S-4 values should be used to assess those impacts. Table S-4 was intended to provide a generic measure of fuel transport impacts and to eliminate the need for case-by-case site-specific development of transshipment impacts absent a showing that the particular fuel transport contemplated involves distances, population exposures, accident probabilities or other factors much greater than those assumed in developing the Table S-4 impact values such that a waiver of application of Table S-4 is warranted pursuant to 10 CFR § 2.758. Statement of Considerations, 40 Fed. Reg. 1005.

consider contentions which do not relate specifically to that proposal. Proper contentions on the transshipment of Oconee and McGuire spent fuel would be contentions which asserted, with specific bases, that the environmental impacts of fuel transshipment determined in licensing the Oconee and McGuire facilities are not valid and that a reanalysis in the context of Catawba licensing is necessary.16/

In either case, Intervenor's contentions 10 and 19 do not address the manner in which the proposal to store Oconee and McGuire spent fuel at Catawba gives rise to the need to reconsider the environmental impacts of fuel transportation already considered on the Oconee and McGuire dockets. Without either a showing of changed circumstances (in the case of Oconee fuel transshipment) or grounds for waiving application of Table S-4 (which was applied for McGuire), there is no grounds for re-examination of the impacts of spent fuel transportation already determined in other proceedings.

In this regard, Intervenor's challenge to the adequacy of the Staff's environmental impact appraisal in Appendix G of the Catawba DES is misdirected. While reliance upon the appraisal's findings could arguably lead to such reconsideration, particularly with respect to the earlier Oconee site-specific evaluation of transportation impacts, a challenge to that appraisal can form no independent basis for such a contention.

16/ Included in this showing (at least from the standpoint of any contention directed to transshipments from McGuire) would be a showing pursuant to 10 CFR § 2.758 that the application of Table S-4 to transshipments from McGuire would not serve the purposes of the rule, e.g., the transportation proposed no longer falls within the assumptions underlying the rule. With respect to transshipment of Oconee spent fuel, an assertion, with specific bases, showing that the assumptions on which the Oconee site-specific evaluation was originally based do not encompass the transportation proposed by the Applicants here would be required.

Similarly, assertions of inadequacy of the EIA could not form the factual basis required for a petition to waive application of Table S-4.

The Staff, in developing Appendix G to the Catawba DES, submitted no petition or affidavit to the Board requesting that Table S-4 values not be used, although the inclusion of the draft site-specific evaluation in Appendix G with different, and greater, impacts than found in Table S-4 could have formed the basis for such a petition. The Staff's analysis was premised on Applicants' April 2, 1982 responses to Staff requests for details concerning Applicants' proposal for spent fuel transshipment. In those responses Applicants proposed a maximum of 300 shipments per year from Oconee and another 300 shipments per year from McGuire, or an average of 120 shipments per reactor per year (600 shipments ÷ 5 units). Since Table S-4 values are based on the WASH-1238 assumption of 60 shipments per reactor per year, the proposal as clarified by the Applicant's April 2, 1982 responses called for twice the number of shipments assumed in Table S-4. Appendix G to the Catawba DES involved an analysis of the impacts of the proposed higher level of annual transshipments. However, Duke Power Company has informed the Staff that it wishes authority to transport only 60 shipments per year per reactor unit; therefore, the discrepancy between the proposal and the WASH-1238/Table S-4 assumptions has now been eliminated.[17/] The rationale

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17/ A difference in the number of shipments, by itself, would not necessarily justify departure from Table S-4 values, if no showing were made that this resulted in values greater than Table S-4. However, the Staff site-specific evaluation concluded that the 600 shipments would result in annual cumulative exposure to drivers of 35 person-rems. DES, Appendix G, p. G-1. Table S-4 assumes the cumulative dose for transportation worker per reactor per year to be 4 man-rem. Since Oconee and McGuire together have 5 units, Table S-4 results in a total exposure of 20 man-rems (for the 300 shipments that would be assumed under Table S-4). The Staff's analysis of Applicant's original proposal thus resulted in a larger exposure than stipulated in Table S-4.

underlying the Staff's site-specific analysis of environmental impacts has thus been removed by the November 2, 1982 clarification of Applicants' proposal for transshipment authority.

The Staff plans to revise its Appendix G to the DES to reflect the Applicants' revised proposal for storage of Oconee and McGuire fuel at Catawba. Specifically, since Applicant's proposal for transshipment of spent fuel from other facilities now essentially falls within the scope of the assumptions for the fuel transshipment previously analyzed at the time those other facilities were licensed, no separate additional consideration of impacts of fuel transshipments from Oconee and McGuire to Catawba will be included in the Catawba environmental impact statement.

The Staff's revisions, however, would have no impact on the admissibility of proposed new contentions DES-10 and -19, since these contentions do not address new or changed circumstances, but would merely replow environmental impacts of fuel transportation previously considered either on a generic or site-specific basis. The Staff therefore believes these contentions should not be admitted.

In sum, Section 51.20(g), when read in light of the accompanying Statement of Considerations, the supporting survey (WASH-1238) and Commission administrative construction, contemplates application of Table S-4 to spent fuel transportation irrespective of destination, and, unless waiver is granted, irrespective of deviations from the assumptions underlying Table S-4. In the present circumstances, we are not considering for the first time whether or not to apply Table S-4;

rather we are considering whether, in this new initial license proceeding, it is appropriate to reconsider earlier findings with respect to the environmental impacts of transporting the fuel of plants already licensed. In the Catawba proceeding, the Licensing Board should consider only matters which fairly arise from the proposal for storage of Oconee and McGuire spent fuel at Catawba and which could not have been and were not considered in the earlier Oconee and McGuire licensing. The impact of the actual storage at Catawba of spent fuel from Oconee and McGuire is such a new matter. Whether the impacts of transshipment from Oconee and McGuire should be reconsidered in the Catawba proceeding, however, depends on the type of showing made. With respect to reconsideration of the environmental impacts of McGuire spent fuel transportation, an Intervenor must make a showing under Section 2.758 that the previous application of Table S-4 to such transportation in the licensing of McGuire does not adequately account for the associated environmental impacts. With respect to reconsideration of Oconee spent fuel transportation impacts, site-specific evaluations were performed when Oconee was licensed. Therefore, a contention would have to show why the earlier determination of impacts is not valid as a result of the new application for storage of Oconee fuel at Catawba. Since Intervenors have done neither, but only challenged the transshipment impact evaluation contained in the Catawba DES-OL, their contentions 10 and 19 must be rejected as lacking in basis, and raising matters that need not be considered in this proceeding.

III. CONCLUSION

The environmental impacts of spent fuel transportation have been properly considered in the context of the initial license proceedings for the Oconee and McGuire facilities. The Licensing Board should not in this proceeding reexamine and the environmental impacts of Oconee and McGuire spent fuel transportation absent a showing of changed circumstances arising out of the Catawba application which demonstrates that reconsideration of environmental impacts of transshipment of Oconee and McGuire fuel is warranted in this proceeding.

Respectfully submitted,

George E. Johnson
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Dated at Bethesa, Maryland
this 13th day of December, 1982

UNITED STATES OF AMERICA
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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF POSITION ON APPLICABILITY OF TABLE S-4 TO TRANSSHIPMENT OF SPENT FUEL FROM OCONEE AND MCGUIRE TO CATAWBA" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, by deposit in the Nuclear Regulatory Commission's internal mail system, this 13th day of December, 1982:

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