

STAFF 4/5/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of
DUKE POWER COMPANY, ET AL.
(Catawba Nuclear Station,
Units 1 and 2)

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)

Docket Nos. 50-413
50-414

NRC STAFF RESPONSE TO BOARD QUESTIONS ON
SPENT FUEL STORAGE AND OPERATOR QUALIFICATIONS



I. INTRODUCTION

In its Memorandum and Order (Reflecting Decisions Made Following Prehearing Conference) dated March 5, 1982 (March 5, 1982 Order) in this proceeding, the Licensing Board requested the Staff to respond to several questions dealing with the litigability of Palmetto Contention 8 on operator qualifications and Palmetto Contentions 15 and 16 on storage of spent fuel from other Duke facilities at Catawba. March 5, 1982 Order at pp. 17-18, 21-22.

In accordance with the Licensing Board's request, the NRC Staff's responses to the Board's inquiries are set forth below.

II. DISCUSSION

A. STAFF RESPONSE TO THE BOARD'S QUESTIONS RELATING TO PALMETTO
CONTENTION 8 ON OPERATOR QUALIFICATIONS

Palmetto Contention 8 questions the qualifications of reactor operators and shift supervisors for Catawba because of an asserted lack

of relevant, "hands-on" experience for such personnel. With regard to this contention, the Licensing Board requested the parties' views on:

(1) Whether the present rules in 10 CFR Part 55, particularly sections 55.11 and 55.24, bar admission and litigation of this contention and

(2) Whether, despite the Commission's Guidance Statement of December 16, 1980 which allows litigation of TMI Action Plan (NUREG-0737) requirements, including clarification I.A.2.1 thereof relating to operator qualifications, litigation of Palmetto Contention 8 is nevertheless barred as a consequence of a proposed rule on this subject (Licensing Requirements for Pending Operating License Applications, Proposed Rule, 46 Fed. Reg. 26491).

As stated below, the Staff position is that this Contention is not barred as a result of the considerations raised by the Board.

1. Regulatory Requirements in 10 CFR Part 55

A review of the requirements for approval of operator and senior operator license applications under 10 CFR Section 55.11(b) reveals no requirement that applicants have "hands-on" operating experience to obtain reactor operator or senior reactor operator licenses.^{1/} An applicant must pass "a written examination and operating test" prescribed by the Commission "to determine that he has learned to operate, and in the case of a Senior Operator, to operate and to direct the licensed activities of licensed operators in a competent and safe manner." 10 CFR Section

^{1/} Inasmuch as a senior operator is defined as "any individual designated by a facility licensee under Part 50 of this chapter to direct the licensed activities of licensed operators," and shift supervisors fall within such definition, shift supervisors must be licensed "senior operators" under Part 55. As a result no separate discussion of the qualifications of shift supervisors is undertaken herein. 10 CFR Section 55.4(e).

55.11(b). An applicant must submit with his application evidence that he has learned to operate the controls at a particular facility in a competent and safe manner, 10 CFR Section 55.10(a)(6), but there is no requirement that this include "hands-on" operating experience. Further, while the written examination and operating test may be waived based, in part, on "extensive operating experience at a comparable facility within two years prior to the date of application," 10 CFR Section 55.24(a), such a showing is not a requirement in the first instance. As a result, were the current provisions of 10 CFR Part 55 the sole regulatory basis for determining operator qualifications, one would have to conclude that there is no requirement that senior operators have "hands-on operating experience with large pressurized water reactors." Thus, a contention based upon such a requirement would, in essence, require more than the regulations require and, accordingly, would be a challenge to the regulations, barred by 10 CFR Section 2.758, in the absence of other Commission action allowing litigation of requirements that go beyond the requirements of the regulations alone.

2. TMI Action Plan Requirements on Qualifications of Senior Reactor Operators

As the Licensing Board has noted, the regulations in 10 CFR Part 55 are not the only requirements on operator qualifications which the Commission has imposed. (March 5, 1982 Order at 18). By Memorandum and Order, dated December 18, 1980 (45 Fed. Reg. 85236, December 24, 1980, CLI-80-42, 12 NRC 654) the Commission issued a Revised Statement of Policy which modified its earlier Statement of Policy of June 16, 1980 (45 Fed. Reg. 41738), which had imposed TMI Action Plan requirements.

The Revised Statement of Policy stated, in part:

The Commission has decided that current operating license applications should be measured by the NRC Staff against the regulations, as augmented by these [TMI-Related Requirements for New Operating Licenses (NUPEG-0737)] requirements.

Ibid. It further stated:

The Commission believes the TMI-related operating license requirements list as derived from the process described above should be the principal basis for consideration of TMI-related issues in the adjudicatory process.

Ibid. With respect specifically to litigation in on-going licensing proceedings of TMI requirements which supplement existing regulations, the Commission stated "the parties may challenge either the necessity for or the sufficiency of such requirements." Ibid.^{2/} Although the Commission did not specifically state in its Revised Statement of Policy that contentions challenging compliance with supplementary TMI-related requirements could be litigated, the Commission did state that "the TMI-related operating license requirements...must be the principal basis for consideration of TMI-related issues in the adjudicatory process," (Ibid.) clearly implying that the Commission contemplated that compliance with those requirements could be considered in adjudicatory proceedings.

A provision that persons seeking eligibility to take the senior operator examination have operating or engineering experience is one of several supplementary requirements under the heading of NUPEG-0737 Action

^{2/} This statement modified the earlier Policy Statement which had not permitted the sufficiency of the requirements to be challenged.

Plan Item I.A.2.1 (see particularly Enclosure 1 to the Memorandum from Harold R. Denton, of March 28, 1980, at 3-20). The effect of the Commission's Revised Statement of Policy, therefore, is to allow Licensing Boards to consider operator experience in deciding issues on senior operator qualifications.

Thus, under this Commission guidance it would be proper to admit a contention, otherwise admissible, which either challenges or relates to compliance with the NUREG-0737 operator qualification requirements. Palmetto Alliance Contention 8, raising directly the sufficiency of senior operator experience, appears to fall within the NUREG-0737 requirements and to be a proper contention for litigation under the Commission guidance, despite the fact that this contention calls for operator qualifications beyond those required by the regulations in 10 CFR Part 55 standing alone.

3. Proposed Rule to Amend 10 CFR Section 50.34(f)(1)(ii)

On May 13, 1981, the Commission published a proposed rule to codify requirements contained in NUREG-0737, and "determined that these requirements must be met by all applicants for operating licenses." Among these is a requirement that:

An applicant for a senior reactor operator license shall have had experience as an operator and shall participate in an NRC approved training program.

46 Fed. Reg. at 26494. This requirement is closely related to Palmetto Contention 8 which the Palmetto Alliance seeks to have admitted for litigation in the Catawba proceeding.

In the situation before us, the Commission has issued specific guidance, through its December 18, 1980 Revised Statement of Policy, providing that the sufficiency of TMI Action Plan requirements may be litigated in individual licensing proceedings. The Commission has not, in its proposed rulemaking on TMI Action Plan requirements or elsewhere, rescinded the authority given to adjudicatory boards to entertain contentions challenging the sufficiency of, or compliance with, the TMI Action Plan requirements. Thus, the guidance in the Revised Statement of Policy remains applicable to TMI Action Plan items, whether or not those Action Plan items are the subject of proposed rulemaking. This conclusion finds support in a recent licensing board decision in Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), Memorandum and Order, March 15, 1982 (Slip. op. at 5, n. 6^{3/}). As a result, there is no basis for finding that the Commission has barred

3/ The Licensing Board in that case stated:

The Commission has published a proposed rule for comment which, if adopted, would make the substance of NUREG-0737 items part of the regulations (proposed new paragraph (f) to § 50.34) for operating license applications. 46 Fed. Reg. 26491 (May 13, 1981). Since the Revised Statement of Policy has not been modified by the proposed rule, and that policy makes these items applicable to Shoreham, there would appear to be no difference created by the pendency or even adoption of the rule, at least in the absence of a challenge by LILCO to the necessity of a NUREG-0737 item.

consideration of Palmetto Alliance Contention 8 by its proposed amendment to 10 CFR Section 50.34(f)(1)(ii).

In summary, while litigation of Palmetto Contention 8 might ordinarily be barred as a challenge to the operator licensing requirements in 10 CFR Part 55, the Commission has, through its Revised Statement of Policy on TMI Action Plan requirements, authorized the litigation of such a contention and that authorization is not affected by the fact that TMI action plan requirements are now the subject of rulemaking. Palmetto Contention 8 may properly be admitted and litigated in this proceeding.

B. STAFF RESPONSES TO BOARD QUESTIONS RELATING TO DUKE APPLICATION FOR AUTHORITY TO STORE SPENT FUEL FROM OTHER DUKE FACILITIES AT CATAWBA

Palmetto Contentions 15 and 16 raise certain concerns regarding the storage at the Catawba facility of spent fuel from other Duke facilities. In its application for an operating license, Duke specifically seeks authority for such storage. In this regard, the Licensing Board has posed a number of questions on the extent of licensing authority Duke is presently seeking, on the Licensing Board's jurisdiction over an application to store or transport spent fuel from other Duke facilities, and on the scope of the environmental evaluation of storage and transportation of spent fuel that is contemplated. Each of these Board questions is addressed in turn.

1. Extent of Licensing Authority Sought

In its question designated as question 2 (March 5, 1982 Order, at 21) the Licensing Board addressed to the Staff three inquiries concerning the extent of the authority Duke is presently seeking or intends to seek in the future with regard to the transportation and storage at Catawba of spent fuel from other Duke facilities. Specifically, the Board asked:

2.[a] What licensing authority is Duke presently seeking to transport or store spent fuel from other facilities to or at Catawba? [b] What additional authority does it intend to seek? [c] Does Duke intend to secure now, in connection with the operating licenses for Catawba, all of the authority it needs to transport and store spent fuel at Catawba from other facilities to the capacity of the Catawba storage pool?

In its Final Safety Analysis Report for Catawba Nuclear Station (FSAR), Applicants consider a plan to store irradiated fuel assemblies from Duke Power Company's Oconee and McGuire nuclear facilities. By letter dated March 8, 1982, the Staff requested Applicants to supply more specific information concerning Applicants' plans in this regard, as well as additional information needed to evaluate the request from both health and safety and environmental perspectives. These questions are appended hereto. As is suggested by the questions, the Staff does not, at this time, have the information needed to respond to the Board's question 2.

2. Adequacy of Applicant's Environmental Report, and Inclusion of Transportation and Storage of Spent Fuel from Other Facilities at Catawba in the Draft Environmental Statement

The Board asked several related questions dealing with the environmental impact of Applicant's plans for the storage of spent fuel

generated at other Duke facilities at Catawba. Specifically, the Licensing Board inquired:

4. Does the Applicant's environmental report include an adequate discussion of any plans to store or transport spent fuel from other facilities at Catawba?
5. Staff only to answer. Does the Staff intend to include in its draft impact statement discussion of transportation of spent fuel from other facilities to Catawba and its storage there? If so, why? If not, why not?

In the Staff's estimation, Applicant's Environmental Report does not include at the present time all the necessary information needed by the Staff for its evaluation of the environmental impact of plans for transporting and storing non-Catawba fuel at Catawba. Several of the questions sent to applicants on March 8, 1982, referred to above and attached hereto, are intended to obtain this information.

The Staff does intend to include in its Draft Environmental Statement a discussion of transportation of spent fuel from non-Catawba facilities to Catawba. As part of the operating license environmental impact statement, the Staff will evaluate environmental impacts of all actions that would be authorized pursuant to the operating license application, including storage of spent fuel. Inasmuch as transshipment of spent fuel from other Duke facilities is a reasonably foreseeable outcome of authorization to store such spent fuel at Catawba and a necessary step to accomplish such storage, the environmental impacts of such transportation should be examined now as part of the environmental evaluation of the spent fuel storage for which Applicant seeks authorization.

As indicated in the Appeal Board decision in 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, 315 (1981), if this were an independent request to make spent fuel shipments between Duke's licensed facilities, a separate environmental assessment would be required to determine whether such shipments would have a significant environmental impact. Id. at 315. Since the request for spent fuel storage authority for non-Catawba fuel has been made as part of Applicants' facility operating license application, the environmental impacts that reasonably may be estimated to result from the grant of such authority must be evaluated now and will be incorporated into the overall environmental impact statement on the operating license application to be issued by the Staff.

3. Licensing Board's Jurisdiction Over Duke's Application To Store Non-Catawba Spent Fuel At Catawba

The Licensing Board also posed the following legal questions:

3. Does this Board presently have jurisdiction over applications to store or transport spent fuel from other facilities? If not, could it and/or should it be given such jurisdiction?

The Staff believes that the "Notice of Receipt of Application for Facility Operating Licenses....and Notice of Opportunity for Hearing," published in the Federal Register (46 Fed. Reg. 32974, June 25, 1981), confers jurisdiction over the application(s) to store spent fuel from other Duke facilities at Catawba, as explained below. However, while transportation impacts of storing such fuel must be considered if storage is considered, it is the Staff's position that authority to transport spent fuel from other Duke facilities to Catawba is not an element of the

Catawba application, nor need it be. Rather, the authority to transport spent fuel is incorporated into the licensing of the facility generating and transporting its spent fuel.

a. Jurisdiction Over Spent Fuel Storage

As noted by this Board, the jurisdiction of a licensing board is normally established by the notice of opportunity for hearing and the subsequent notice of establishment of the board. (March 5, 1982 Order, at 20). The notice confers such jurisdiction by "referencing the specific license application or applications to be considered." Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-76-1, 3 NRC 73, 74, n. 1 (1976). While the Board here correctly notes that the hearing notice for Catawba contains no explicit reference to a request for authorization to store spent fuel from other Duke facilities (but refers explicitly only to facility operating licenses), such an explicit reference appears not to have been considered essential to the establishment of the necessary jurisdiction in the Diablo Canyon case. (Ibid). There it was enough to confer jurisdiction that a Part 70 materials license application was "integral to the Diablo Canyon project." (Ibid).

Numerous cases have held that the jurisdiction of a Licensing Board is limited by the terms of the notice of hearing published by the Commission. See, e.g., Northern Indiana Service Co. (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558 (1980); Commonwealth Edison Co., et al. (Carroll County Site), ALAB-601, 12 NRC 18 (1980); Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-171 (1976). However, in many such cases, the

scope of the notice was explicit and was limited to particular issues. Thus in Carroll County, the notice was "most explicit in identifying the issues to be considered in this early site review." Carroll County, supra, 12 NRC at 24. Where, as here, the notice is general--referring to "an application for facility operating licenses"--and no specific issues are identified, it is more difficult to define the scope of the proceeding by the language of the notice alone.

In Diablo Canyon, as in this case, the utility sought authorization to store fuel at the reactor. However, the materials license sought in Diablo Canyon was for authority to deliver and store fuel to be used in generating power after the facility license was issued, an activity which was "integral" to operation of the plant, and included within the authority to operate the facility. In contrast, storage of spent fuel from other facilities is not a necessary element of the operation of the facility at which such storage is sought and is not ordinarily included in facility operating licenses. On the other hand, that authority is within the scope of the Catawba project as defined in Duke's application. The application is referred to in the Federal Register notice as for "facility operating licenses;" nevertheless, the notice states, "[f]or further details pertinent to the matters under consideration, see the application for facility operating licenses...". 46 Fed. Reg. 32975. While the notice does not expressly refer to a materials license for storing spent fuel from other plants, the application for materials

licenses is included within applicants' request for "facility operating licenses" in its application.^{4/}

Inasmuch as the Commission Order, "Establishment of Atomic Safety and Licensing Board to Preside in Proceeding", dated July 28, 1981, states that the "Board is being constituted pursuant to a notice published by the Commission on June 25, 1981 in the Federal Register (46 F.R. 3297-75)..." and that notice references the application, without any suggestion that the notice refers to only a part of the application, it is reasonable to infer that the Commission intended to confer jurisdiction on the Board to rule on petitions and to preside, as necessary, over the proceeding with regard to any authority which might be sought in the application.^{5/}

^{4/} It is not unusual to incorporate materials licenses within facility operating licenses. For example, when the Appeal Board authorized the issuance of a materials license to Duke to store Oconee spent fuel at McGuire, such authority was incorporated by amendment to the McGuire facility operating license. License NPF-9, Section 2.K.

^{5/} There is no requirement that all information which would define the scope of the proceeding, or intervention therein, be explicitly stated in the Federal Register notice. Thus, in Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1) ALAB-574, 11 NRC 7, 10 (1980), the Appeal Board noted that information beyond that included in the actual notice may need to be examined to determine the scope of the proceeding. The Appeal Board stated: "Before filing their petitions on the strength of the notice, it [is the potential intervenors'] plain duty -- as it is the obligation of any individual desirous of obtaining entry into an NRC licensing proceeding on the basis of such a notice -- to make inquiry into the possible existence of preconditions." (*Id.* at 10). See also, Diablo Canyon, CLI-76-1, *supra*, 3 NRC at 74, n. 1. Indeed, in the instant case, Palmetto Alliance, at least, obviously consulted the application referenced in the Federal Register notice, and determined from it that authority to store fuel from other Duke facilities was being sought in the Catawba application.

Thus, the scope of the application referenced in the notice, as well as the scope of the notice itself, is an element in determining the extent of a Board's jurisdiction. In Commonwealth Edison Company (Zion Station), ALAB-616, 12 NRC 419, 426 (1980), the Appeal Board stated:

As the Board correctly perceived, its jurisdiction was limited by the Commission's notice of hearing. That jurisdiction extended only to issues fairly raised by the application to modify the spent fuel pool, the sole matter which the Commission placed before it. (Citation omitted, emphasis added.)

Here the application placed before the Board contained a request for materials licenses for storing spent fuel from other sites at Catawba.

Finally, the lack of express reference to the materials license application in the notice of hearing cannot reasonably be said to have caused prejudice to any interested party. The notice did, in fact, reference Duke's application wherein all aspects of the authority sought by Duke, including the authority to store non-Catawba fuel at Catawba, are described. Indeed, Intervenor Palmetto Alliance has raised issues pertaining to the application for authority to store spent fuel from other Duke facilities based on its examination of the operating license application referenced in the notice. See Diablo Canyon, CLI-76-1, supra, 3 NRC at 74, n. 1.^{6/}

In short, it is the Staff's view that, although the notices which establish the Board's jurisdiction do not explicitly refer to Duke's requests for authority to store spent fuel from other facilities at Catawba, the notices do refer to the application for an operating license

^{6/} It also makes "good practical sense" for this Licensing Board, which will become familiar with the Catawba project, to be the Board to deal with these issues. (Ibid).

within which the request for spent fuel storage authority is contained. Because such request is fairly within and a part of the application for an operating license, the Licensing Board has jurisdiction to entertain contentions raised with respect to the operating license application, including contentions related to the portion of that application which seeks authority to store spent fuel from other Duke facilities at Catawba.

b. Jurisdiction Over Transportation Issues

Duke has not, at least expressly, sought authority in this proceeding to transport spent fuel generated at other Duke facilities to Catawba. Since no authority to transport spent fuel is sought and a request to transport spent fuel is not contained in Duke's application for an operating license, there is, quite simply, no application before the NRC or the Licensing Board in this regard nor is there a need for such application. Duke, having received facility operating licenses for the Oconee and McGuire stations, is authorized by general license, to deliver licensed material to a carrier for transport, subject to fulfillment of certain packaging requirements (10 CFR Section 71.12), and to transport licensed material outside the confines of the licensee's plant subject to compliance with Department of Transportation or U.S. Postal Service requirements (10 CFR Section 71.5) provided that the transfer of special nuclear material is to an authorized receiver (10 CFR Section 70.42).^{7/} See also 10 CFR § 70.41, and 10 CFR §§ 73.25, 73.26, 73.27, 73.37. In short, matters regarding the authority to

^{7/} Thus, when Duke Power Company's Facility Operating License for McGuire Nuclear Station, Unit 1, License No. NPF-9, was amended October 27, 1981 to permit storage of Oconee spent fuel at McGuire, no amendment to the Oconee Nuclear Station licenses was needed or made to authorize transport of the fuel. (License Nos. DPR-38, 47, 55).

transport spent fuel need not and should not be at issue here. Rather, it is the authorization to receive that fuel at Catawba which is at issue.

On the other hand, issues involving the environmental impacts of transportation, and issues involving site-specific safety matters such as loading or unloading of the spent fuel and the actual storage of non-Catawba spent fuel at Catawba are within the jurisdiction of the Board since such issues "fairly arise" from the application to store such spent fuel at Catawba. Zion, ALAB-616, 12 NRC at 426; see also, Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, August 1979, NUREG-0575, Vol. 1, Section 3.2.1, pp. 3-22, 3-25; and 46 Fed. Reg. 14506, 14507 (February 23, 1981).

In summary, it is the Staff's view that while the Board need not and should not consider Duke's authority to transport spent fuel generated at other facilities to Catawba, the Board does have the jurisdiction to entertain contentions on the environmental aspects of spent fuel trans-shipment and site-specific safety aspects of spent fuel storage that fairly arise from Duke's request to receive and store such spent fuel at Catawba.

III. CONCLUSION

For the foregoing reasons, it is the Staff's view that:

as to operator qualifications

- (1) While current regulations alone would preclude admission of Palmetto Contention 8, that contention is litigable based upon the directions by the Commission to consider NUREG-0737

requirements as the basis for the Board's licensing determinations;

as to the storage of spent fuel generated at other Duke facilities at Catawba:

(2) Duke must clarify the nature and extent of the authority it seeks with regard to the storage of non-Catawba spent fuel at Catawba;

(3) Duke must provide supplementary information to allow a full evaluation of the safety and environmental impacts of its plans or intentions for the storage of non-Catawba spent fuel at Catawba;

(4) The Environmental Impact Statement on operation of Catawba should and will address storage of non-Catawba spent fuel at Catawba;

(5) The Licensing Board has jurisdiction over Duke's application for authority to store non-Catawba fuel at Catawba; and

(6) While Duke already possesses, through its Oconee and McGuire licenses, authority to transport spent fuel from those reactors, issues relating to the environmental aspects of transportation and the site-specific safety aspects of spent fuel storage that fairly arise from Duke's request to receive and store such spent fuel at Catawba are properly within the scope of this proceeding.

Respectfully submitted,



George E. Johnson
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 5th day of April, 1982.

ADDITIONAL CONCERNS REGARDING
THE STORAGE OF NON-CATAWBA FUEL
AT THE CATAWBA NUCLEAR STATION, UNITS 1 AND 2

1. In the FSAR, you have considered a plan to store irradiated fuel assemblies from Oconee, Unit Nos. 1, 2, and 3, and from McGuire, Unit Nos. 1 and 2.
 - a) Is Duke considering plans to store irradiated fuel assemblies from facilities other than Oconee or McGuire?
 - b) If answer to (a) is yes, does Duke's present application include request for authority to store irradiated fuel assemblies from facilities other than Oconee and McGuire?
 - c) What is the earliest date that Duke is considering commencement of shipment of irradiated fuel assemblies from Oconee and McGuire to Catawba and storage thereof at Catawba?
2.
 - a) What is the minimum storage time prior to the shipment of spent fuel assemblies to Catawba from the Oconee and McGuire Stations?
 - b) Provide the technical specification that will limit the spent fuel capacity in the spent fuel pools at Catawba, Unit Nos. 1 and 2. How much space will be reserved for a complete core defueling from Catawba, for other core components, and for fuel assemblies from the Oconee and McGuire Stations? How much additional space will be provided for spent fuel casks from other Duke facilities?
3.
 - a) What is the maximum number of spent fuel assemblies per year and the maximum number of shipments per year that will be transferred from Oconee and McGuire stations to Catawba? Will they be shipped by truck, rail or barge?

- b) What is the estimated water temperature in the spent fuel pool due to the schedule proposed in your response to 3a, above?
 - c) What is the average weight of UO_2 in each fuel assembly from the Oconee and McGuire Stations?
 - d) What is the average irradiation level (burnup) of the spent fuel to be shipped to Catawba?
 - e) What additional amount of solid radwaste will be generated at Catawba as a result of this alternate plan?
 - f) Will failed fuel assemblies be shipped from the Oconee or McGuire Stations to be stored in the Catawba spent fuel pools?
4. Duke Power Company is presently considering spent fuel rod consolidation at Oconee. Provide your plan for possible future use of the Catawba spent fuel pools for storage of consolidated fuel assemblies from Oconee, McGuire, or Catawba.
 5. Provide the nominal value of the effective multiplication factor of the racks and the uncertainty to be added to this value due to the storage of non-Catawba irradiated fuel at Catawba.
 6. Provide the verification results of the KEKO Code used. This should include a description of the experiments which were calculated and the bias and standard deviation of the calculational results. It should be noted that the KEKO code was not previously approved by the NRC.
 7. The Oconee fuel assemblies which may be stored in Catawba racks are 15 x 15 rather than 17 x 17 assemblies. For the same enrichment there may be small differences between these and the optimized Westinghouse design. Provide a discussion of such differences.

8. Identify the casks used for fuel shipments between Oconee, McGuire and Catawba.
9. Provide the name of the carrier.
10.
 - a) Provide the routes that Duke plans to consider in shipping fuel from Oconee and McGuire to Catawba .
 - b) Provide the distances in miles of the proposed routes.
 - c) What is the average population density along each of the proposed routes?
11. When does Duke plan to submit a route approval request in accordance with 10 CFR 73.37 for spent fuel shipments between Oconee, McGuire and Catawba?
12. Confirm that the material combinations of the fuel and storage racks and the spacer-insert materials to be used in the Catawba spent fuel pool for non-Catawba fuel are identical to those for Catawba fuel.
13. Does Duke plan to return any of the Oconee or McGuire fuel stored at Catawba to these facilities (i.e., Oconee or McGuire) in the future?
14. Discuss the applicability of Table S-4, 10 CFR 51.20, to your plans for shipping fuel from Oconee and McGuire to Catawba. Include such factors as traffic density, transportation workers, exposure of the general public, radiological effects and any pertinent site specific considerations such as a large number of construction workers at any of these plants.
15. The transportation of spent fuel to Catawba from Oconee and McGuire should result (except for mileage and routes) in an increased impact

8. Identify the casks used for fuel shipments between Oconee, McGuire and Catawba.
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 - a) Provide the routes that Duke plans to consider in shipping fuel from Oconee and McGuire to Catawba .
 - b) Provide the distances in miles of the proposed routes.
 - c) What is the average population density along each of the proposed routes?
11. When does Duke plan to submit a route approval request in accordance with 10 CFR 73.39 for spent fuel shipments between Oconee, McGuire and Catawba?
12. Confirm that the material combinations of the fuel and storage racks and the spacer-insert materials to be used in the Catawba spent fuel pool for non-Catawba fuel are identical to those for Catawba fuel.
13. Does Duke plan to return any of the Oconee or McGuire fuel stored at Catawba to these facilities (i.e., Oconee or McGuire) in the future?
14. Discuss the applicability of Table S-4, 10 CFR 51.20, to your plans for shipping fuel from Oconee and McGuire to Catawba. Include such factors as traffic density, transportation workers, exposure of the general public, radiological effects and any pertinent site specific considerations such as a large number of construction workers at any of these plants.
15. The transportation of spent fuel to Catawba from Oconee and McGuire should result (except for mileage and routes) in an increased impact

on the total spent fuel movement related to Catawba. What will be the additional increase in spent fuel movement over that normally expected if no spent fuel were imported from Oconee and McGuire?