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50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

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SUBJECT: Forwards revised NSHC in support of 851119 application to
amend Licenses DPR-38, DPR-47 & DPR-55, permitting authorizing
use of multi-element spent fuel casks in spent fuel pool.

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June 16, 1986

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. John F. Stolz, Project Director
PWR Project Directorate No. 6

RE: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

By letter dated November 19, 1985 Duke Power Company (Duke) submitted a proposed amendment to the Oconee Facility Operating License and revisions to the Oconee Nuclear Station Technical Specifications. The requested amendment would allow the use of the multielement spent fuel casks in the Oconee Nuclear Station Unit 3 spent fuel pool.

By letter dated May 12, 1986 the NRC staff found the no significant hazards consideration (NSHC) evaluation attached to Duke's amendment request (Attachment 3) deficient in that the basis for each of three standards in 10 CFR 50.92 were not addressed separately and directly. Furthermore, the NRC staff stated that approval of the proposed changes requires that Duke revises the justification and NSHC portions presented in Duke's November 19, 1985 letter with a NSHC which satisfies 10 CFR 50.91(a)(1).

As such, please find attached a revised NSHC evaluation as a supplement to Duke's amendment request dated November 19, 1985. The revised NSHC addresses separately the standards of 10 CFR 50.92 and satisfies the requirements of 10 CFR 50.91(a)(1). The revised NSHC is intended to supersede the contents of Attachment 3 to Duke's letter of November 19, 1985.

Please note that on March 20, 1986 Duke submitted proposed license amendments to Facility Operating Licenses NPF-9 and NPF-17 for McGuire Nuclear Station Units 1 and 2, respectively, to allow the use of multielement TN-8 and TN-8L spent fuel casks for receipt of irradiated Oconee fuel. Supplemental information was also provided by a letter dated May 23, 1986. The information provided in the mentioned letters provide additional justification in support of meeting the requirements of 10 CFR 50.92 as related to the use of multielement spent fuel casks.

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Mr. Harold R. Denton, Director

June 16, 1986

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Since Duke's November 19, 1985 amendment request will provide a necessary extension of the Oconee Nuclear Station's ability to maintain adequate storage capacity and inasmuch as section 131 of the Nuclear Waste Policy Act directs the Federal Government to "encourage and expedite the effective use of existing storage facilities", it is requested that the proposed amendments be approved expeditiously to allow the use of multielement spent fuel casks in shipment of Oconee spent fuel to McGuire Nuclear Station scheduled for mid 1986. These shipments are necessary to maintain a prudent operating reserve of spent fuel storage capacity at Oconee Nuclear Station.

Should there be any questions or if additional information is required, please advise.

Very truly yours,



Hal B. Tucker

MAH:slb

Attachment

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Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

No Significant Hazards Consideration Evaluation

Duke Power Company (Duke) has made the determination that this amendment request involves a No Significant Hazards Consideration by applying the standards established by the Commission's regulations in 10 CFR 50.92. This ensures that operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The proposed Technical Specification addressed in this submittal involves a change that constitutes an additional limitation and a more stringent requirement not presently included in Technical Specifications. Specifically, the requested amendment will change Technical Specification 3.8.13.b by increasing a margin of safety to allow the use of multielement (three fuel assemblies) TN-8 and TN-8L spent fuel casks in Oconee Unit 3 spent fuel pool for shipment of Oconee spent fuel to McGuire Nuclear Station. Use of such casks will require fewer shipments than the present single assembly cask.

On July 26, 1985 the NRC issued Amendment No. 44 to Facility Operating License NPF-9 and Amendment No. 25 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2 to receive, possess, and store irradiated fuel assemblies from the Oconee Nuclear Station. The transfer of spent fuel to McGuire Nuclear Station is to provide fuel storage capability at Oconee Nuclear Station. Currently, receipt at McGuire Nuclear Station of Oconee spent fuel is limited by the use of the NFS-4 or NLI-1/2 single fuel assembly spent fuel casks.

Of the 300 approved, approximately 50 Oconee spent fuel assemblies have been transferred to McGuire Nuclear Station. These transfers have been made with the single fuel assembly NLI-1/2 spent fuel cask. Duke Power Company's plans are to use the multielement spent fuel cask TN-8L and possibly TN-8 to expedite the transfer. With a transition to the larger cask by mid 1986, Duke expects to have the remaining assemblies shipped by mid 1988.

There is a need to maintain a prudent operating reserve (POR) in each spent fuel pool on the Duke system. POR includes capacity for core off-load, reload batch, and upender access. Oconee currently has approximately a 1/2 year margin prior to reaching the POR level. Spent fuel shipments on Duke's system have been found to be labor intensive, and, given activities being conducted in two pools serving three reactors, difficult to schedule consistently. Shipping rates approximating the rate of fuel discharges into the Oconee pools would be difficult to maintain utilizing only a single element cask. Duke therefore believes the use of a multielement spent fuel shipping cask is essential to prevent loss of available spent fuel storage capacity to unacceptable levels. There are a number of operational advantages of the TN-8L over the NLI-1/2 cask. They are as follows:

- A larger capacity cask such as the TN-8L will require fewer shipments than the single assembly cask, and fewer shipments will necessitate the expenditure of fewer resources (e.g. lower station manpower requirements).
- Greater confidence in maintaining the necessary shipment rate.
- Though negligible, total radiation exposure is expected to be lower.
- Probability of adverse public impact is reduced since only one third as many shipments must be made.

Use of the TN-8L shipping cask also enhances the ability to effectively address future contingencies.

Radiological consequence calculations for hypothetical cask drop events involving the multielement casks as presented in Attachment 2 indicate that if the spent fuel stored in the first 33 rows of the storage racks closet to the cask handling area in Oconee 3 pool have a decay period of at least 70 days, the resulting doses are below 10CFR part 100 limits. The current Technical Specification 3.8.13.b limits the damage to the first 31 rows of the fuel storage cells. The proposed amendment will revise the Technical Specification 3.8.13.b limit to 33 rows in order to use the TN-8 or TN-8L casks in Oconee Unit 3 spent fuel pool. The casks can be used in the Oconee 1 and 2 spent fuel pool without further licensing action. The current analysis for Oconee Units 1 and 2 spent fuel pool bounds the use of TN-8 and TN-8L casks. Use in the McGuire spent fuel pool has been requested via an amendment to the McGuire operating licenses, Docket Nos. 50-369 and 50-370 dated March 20, 1986.

The TN-8 and TN-8L shipping casks have been issued a Certificate of Compliance for radioactive materials packages, which was recently renewed by the NRC (Certificate No. 9015, Revision 10, expiration date January 31, 1991). A description of the TN-8 and TN-8L casks along with various other information is contained in the Certificate of Compliance. Furthermore, Duke has evaluated the use of multielement casks TN-8 and TN-8L along transportation routes and found to be permitted. Cask platforms, operating decks, etc. have been determined structurally capable of supporting these casks. Spent fuel cask handling and lifting devices were also evaluated for use of the TN-8 and TN-8L casks and determined to have adequate capacity. In addition, necessary procedural revisions and personnel training will be completed prior to use of the casks. It is planned to conduct dry runs with the TN-8L cask on completion of the current NLI-1/2 shipments.

The following paragraphs address each of the three standards established by the regulations in 10 CFR 50.92.

First Standard

The proposed amendment would allow for the use of the TN-8 and TN-8L multi-element casks. While this is a larger and heavier cask, the procedures, load paths and equipment that will be used for handling it are essentially unchanged from those set for the single element cask. Consequently the previously evaluated cask accident casual mechanisms are essentially unchanged. Use of the multi-element cask therefore does not involve a significant increase

in the probability of the previously evaluated cask drop accident. Further, since the multi-element cask requires only one third as many shipments as the single element cask for a given number of assemblies, the probability of an accident is significantly reduced.

The consequences of a hypothetical cask/heavy load accident involving the heavier multi-element spent fuel cask for Oconee Units 1 and 2 spent fuel pool are bounded by the present analysis. However, as indicated in Attachment 2, the movement of spent fuel casks in the Unit 3 spent fuel pool will not be allowed unless the first 33 rows of spent fuel adjacent to the spent fuel cask handling area have decayed a minimum of 70 days. This is a more stringent requirement than the present Technical Specification requirements. This would assure that the previously evaluated cask drop events would continue to be bounding and that the radiological consequences, as shown in Attachment 2, will be within the limits of 10 CFR 100. A significant increase in overall consequences for this accident will therefore not occur as a result of this proposal amendment.

Second Standard

The TN-8 and TN-8L shipping casks have been issued and continue to hold an NRC Certificate of Compliance for radioactive materials packages. Also, a thorough investigation of weight limitations and other restrictions along the currently approved transportation routes between Oconee and McGuire was performed. Duke was therefore able to conclude that the use of these heavier multi-element casks along these routes would be permitted and no new or modified routes would have to be developed. Additionally as discussed above, the procedures, load paths and equipment to be used for cask handling are essentially unchanged from those used for the single element cask.

Consequently, with no requirements for route changes, recertification of casks, or significant variations in procedures or equipment usage, Duke has determined that no new or different kinds of accidents other than the previously evaluated cask drop accident will be created as a result of this proposed technical specification change.

Third Standard

The multi-element TN-8 and TN-8L shipping casks and the NSF-4 and NLI-1/2 casks have been issued NRC Certificates of Compliance. It is assumed that both the single element and multielement casks were certified using standardized safety margins. Additionally as discussed in Attachment 2, the consequences of the cask drop events in the present analysis are bounding for Oconee Units 1 and 2 spent fuel pool. For Oconee 3 spent fuel pool, the proposed amendment will provide additional margin of safety by requiring the first 33 rows of spent fuel adjacent to the cask handling area to have decayed a minimum of 70 days before any cask movement is allowed. This ensures that the consequences of a cask drop event will be within the 10 CFR 100 limits.

Additionally, the use of multi-element cask will require fewer shipments than the single assembly cask, thus, reducing the already small risk to public health and safety. Any previously determined margins of safety would not be significantly reduced by allowing the use of the multielement spent fuel casks

TN-8 and TN-8L for the shipment of Oconee spent fuel to McGuire Nuclear Station.

In summary, Duke has determined based on the above discussion and the technical justification contained in Attachment 2 that the requested amendment does not involve a significant increase in the probability or consequences of accidents previously considered, nor create the possibility of a new or different kind of accident, and will not involve a significant decrease in a safety margin. Therefore, Duke concludes that there is a No Significant Hazards Consideration involved in this amendment request.