

Docket Nos.: 50-369  
~~50-370~~

26 JUN 1986

Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

*P*

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Dear Mr. Tucker:

Enclosed for your information is a "Notice of Consideration of Issuance of Amendment to Facility Operating License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing" related to your May 15, 1986, request concerning the Cycle 4 reload for McGuire Nuclear Station, Unit 1.

The notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,  
*LSL*

B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A, NRR

Enclosure: As stated

cc w/enclosure:  
See next page

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Mr. H. B. Tucker  
Duke Power Company

McGuire Nuclear Station

cc:

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UNITED STATES NUCLEAR REGULATORY COMMISSIONDUKE POWER COMPANYDOCKET NOS. 50-369 AND 50-370NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE AND PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License Nos. NPF-9 and NPF-17, issued to Duke Power Company (the licensee), for operation of the McGuire Nuclear Station, Units 1 and 2, located in Mecklenburg County, North Carolina.

The amendments would revise the Technical Specifications (TS) to reflect the third of several refueling stages involved in the continuing transition to the use of optimized fuel assemblies in McGuire Unit 1. The TS changes would provide for plant operation consistent with the design and safety evaluation conclusions in the licensee's McGuire Unit 1 Cycle 4 Reload Safety Evaluation (RSE) accompanying the licensee's amendment request of May 15, 1986.

TS Figure 3.2-1, "Axial Flux Difference Limits as a Function of Rated Thermal Power" would be revised for McGuire Unit 1 to be based upon a hot channel peaking factor ( $F_Q$ ) limit of 2.26, rather than 2.15. The revised figure would be designated Figure 3.2-1a and would be indicated to apply to Unit 1 only. The existing TS Figure 3.2-1 would be retained for Unit 2 only and would be redesignated Figure 3.2-1b.

TS Figure 3.1-0, "Moderator Temperature Coefficient Vs. Power Level," would be revised for Units 1 and 2 to provide a more positive moderator temperature coefficient and an expanded region of acceptable operation. The

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region of acceptable operation in the existing TS Figure 3.1-0 is based upon moderator temperature coefficients not to exceed  $+0.5 \times 10^{-4}$  delta K/K/degrees Fahrenheit for power levels up to 70 percent of rated thermal power; the region of acceptable operation for the proposed new TS Figure 3.1-0 would be based upon moderator temperature coefficients not to exceed  $+0.7 \times 10^{-4}$  delta K/K/degrees Fahrenheit for power levels up to 70 percent of rated thermal power, and extended thereafter (from 70 percent to 100 percent of rated thermal power) to decrease linearly to a coefficient of zero.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means 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.

On April 20, 1984, the Commission issued Amendment No. 32 to Facility Operating License NPF-9 to change the Technical Specifications to permit changes in operating limits related to the transition to the use of optimized fuel assemblies in McGuire Unit 1. Accordingly, after its first refueling for Cycle 2, Unit 1 operated with the first stage of a transition core consisting of approximately 1/3 Westinghouse 17x17 Optimized Fuel Assemblies (OFAs) and

2/3 Westinghouse 17x17 low-parasitic fuel assemblies (STDs). On May 15, 1985, the Commission issued Amendment No. 43 to the Unit 1 operating license to change the technical specifications for Cycle 3. After its second refueling for Cycle 3, Unit 1 operated with approximately another 1/3 of the original total STDs replaced with OFAs. During its third refueling for Cycle 4, 64 additional STDs (those comprising Region 6 of the core) will be replaced by OFAs, leaving the 9 STDs of Core Region 1 for future transitions. The transition is planned to continue until an all OFA fueled core is achieved.

The major differences between STDs and OFAs are the use of Zircaloy grids for the OFAs versus Inconel grids for STDs and a reduction in fuel rod diameter. The OFA fuel has similar design features compared to the STD fuel, which has had substantial operating experience in a number of nuclear plants. Major advantages for utilizing the OFAs are: (1) increased efficiency of the core by reducing the amount of parasitic material and (2) reduced fuel cycle costs due to an optimization of water to uranium ratio.

The McGuire Unit 1/Cycle 4 RSE describes all of the accidents comprising the licensing bases which could potentially be affected by the fuel reload for the Unit 1/Cycle 4 design. The results of the analyses conclude that:

a. The Westinghouse OFA reload fuel assemblies for McGuire 1 and 2 are mechanically compatible with the STD design, control rods, and reactor internals interfaces. Both fuel assemblies satisfy the current design bases for the McGuire units.

b. Changes in the nuclear characteristics due to the transition from STD to OFA fuel will be within the range normally seen from cycle to cycle due to fuel management effects.

c. The reload OFAs are hydraulically compatible with the current STD design.

d. The accident analyses for the OFA transition core were shown to provide acceptable results by meeting the applicable criteria, such as, minimum DNBR, peak pressure, and peak clad temperature, as required. The previously reviewed and licensed safety limits are met.

e. Plant operating limitations given in the Technical Specifications will be satisfied with the proposed changes.

From these evaluations, it is concluded that the Unit 1/Cycle 4 design does not cause the previously acceptable safety limits to be exceeded.

Control of axial flux distribution in the Unit 1/Cycle 4 core will be based on the methodology and application of Relaxed Axial Offset Control (RAOC). (RAOC is a method of utilizing available margin by expanding the allowable band for axial flux difference (AFD), particularly at reduced power, in order to enhance operational flexibility during non-steady state operation. RAOC also provides a method of assuring plant operation below the  $F_Q$  limit based upon a measured parameter, neutron flux). The proposed amendments would revise existing TS Figure 3.2-1, for McGuire Unit 1 only, to be based upon the  $F_Q$  limit of 2.26. By previous Amendment 43 for Unit 1/Cycle 3, the Commission approved the change in  $F_Q$  from 2.15 to 2.26 for McGuire Unit 1, however the licensee opted to defer the associated changes with respect to TS Figure 3.2-1, until Cycle 4. The licensee's analyses for Unit 1/Cycle 4, submitted May 15, 1986, are consistent with the proposed revised Figure 3.2-1a based on an  $F_Q$  of 2.26. By letter dated May 23, 1986, the licensee submitted the associated Peaking Factor Limit Report for McGuire Unit 1/Cycle 4 associated with proposed Figure 3.2-1a. The results of the McGuire Unit 1/Cycle 4 RSE are indicated above to be acceptable.

To assess the effect of operation of McGuire Units 1 and 2 with the proposed positive moderator temperature coefficient, the licensee's letter of May 15, 1986, included safety analyses of all transients sensitive to a minimum or positive moderator temperature coefficient. These transients included control rod assembly withdrawal from subcritical conditions, control rod assembly withdrawal at power, loss of reactor coolant flow, locked rotor, turbine trip, loss of normal feedwater, rupture of a main feedwater pipe, control rod ejection, and RCS depressurization. The study indicated that the proposed moderator temperature coefficient would not result in the violation of any safety limits. The results of the Commission's preliminary review of the licensee's analyses support this conclusion by the licensee.

The Commission proposes to determine that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means 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 Commission has provided examples of amendments likely to involve no significant hazards considerations (51 FR 7744). One example of this type is (vi), "A change which either may result in some increase to the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where results of the change are clearly within all acceptable criteria with respect to the system or component specified in the standard review plan: for example, a change resulting from the application

of a small refinement of a previously used calculational model or design method". The evaluations previously discussed show that all of the accidents comprising the licensing bases which could potentially be affected by the fuel reload were reviewed for the Unit 1/Cycle 4 design. These evaluations conclude that the reload design does not cause the previously acceptable safety limits, as specified in the Standard Review Plan, to be exceeded; therefore, the above example can be applied to this situation. Accordingly, the Commission proposes to determine that these changes for the Unit 1/Cycle 4 reload, including the changes in axial flux difference and moderator temperature coefficient, and the change for Unit 2 regarding moderator temperature coefficient, do not involve a significant hazards consideration.

Another example of actions not likely to involve a significant hazards consideration, example (i), relates to a purely administrative change to technical specifications to achieve consistency throughout the technical specifications, correction of an error, or a change in nomenclature. The Commission proposes to find that the changes to Unit 2 specifications which do not change the content of the TS for Unit 2, but which appropriately preserve or eliminate the distinctions between units within the common document, are administrative and involve no significant hazards consideration. The redesignation of TS Figure 3.2-1 as Figure 3.2-1b for Unit 2 only, matches this example.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination. The Commission will not normally make a final determination unless it receives a request for a hearing.



Written comments may be submitted to the Rules and Procedures Branch, Division of Rules and Records, Office of Administration, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555 and should cite the publication date and page number of the Federal Register notice. Comments may also be delivered to Room 4000, Maryland National Bank Building, Bethesda, Maryland from 8:15 a.m. to 5:00 p.m. Monday through Friday. Copies of comments received may be examined at the NRC Public Document Room, 1717 H Street, N. W., Washington, D. C.

By July 28, 1986 , the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person who interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written petition for leave to intervene. Request for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR §2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding;

(2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspects(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitation in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination of the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room 1717 H Street, N. W., Washington, D. C., by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at (800) 325-6000 (in Missouri (800) 342-6700). The Western Union

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operator should be given Datagram Identification Number 3737 and the following messaged addressed to B. J. Youngblood: petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this FEDERAL REGISTER notice. A copy of the petition should also be sent to the Executive Legal Director, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, and to Mr. Albert Carr, Duke Power Company, 422 South Church Street, Charlotte, North Carolina 28242, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and at the Atkins Library, University of North Carolina, Charlotte (UNCC Station), North Carolina 28223.

Dated at Bethesda, Maryland, this <sup>24th</sup> day of June 1986.

FOR THE NUCLEAR REGULATORY COMMISSION

<sup>151</sup>  
B. J. Youngblood, Director  
PWR Project Directorate #4  
Division of PWR Licensing-A, NRR

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06/20/86  
*W. M. & J. A. Hinkle*  
*Commented 6/20/86*  
*Comment sheet misforwarded*  
*DSH 6/23/86*

<sup>DSH</sup>  
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