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DUKE POWER

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Catawba Nuclear Station Units 1 & 2
Docket Nos. 50-413, 414
Proposed Technical Specification Changes

Sept. 19, 1994.

Gentleman:

Pursuant to 10CFR50.90, please find attached proposed license amendments to facility operating licenses NPF-35 and NPF-52 for Catawba Nuclear Station Units 1 & 2, respectively. The proposed changes would increase the initial fuel enrichment limit from a current maximum of 4.00 weight % to 5.00 weight % and establish new loading patterns for new and irradiated fuel in the spent fuel pool to accommodate this increase. These changes are similar in content and format to the technical specification amendments requested for McGuire Nuclear Station and transmitted by letter dated June 13, 1994.

The changes are being submitted to increase the efficiency of fuel storage cell use in the spent fuel pools and to provide additional flexibility to the reload design efforts at Duke Power Company, while at the same time maintaining sufficient criticality safety margin and decay heat removal capabilities. Summary results and discussion of criticality analyses for the Spent Fuel Pool and New Fuel Storage Vault, which underlie the proposed Limiting Conditions of Operation, are enclosed as well. These analyses were performed using methodology based on NRC approved CASMO-3/ SIMULATE-3P computer models which are routinely used at Duke for core reload design. This methodology was submitted for your review and approval for SFP use with comparable technical specification amendments for the McGuire Nuclear Station, as described above.

A summary of the Technical Specification changes being submitted is given in Attachment I. The accompanying No Significant Hazards (NSH) Analysis and Environmental Impact Statements are given in Attachments II and III, respectively. The technical basis for this submittal, accompanying calculational methodologies, and analytical results are given in Attachment IV.

Duke Power requests a timely review and approval of the proposed TS revisions. Approval by June, 1995 is necessary in order to proceed with fuel material commitments to support the Catawba Unit 2, Cycle 8 refueling, scheduled for December of 1995.

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Preliminary reload design analyses for this cycle are underway and call for fuel enrichments in excess of current limits, resulting in considerable cost savings.

Pursuant to 10CFR50.91 (b) (1), a copy of this amendment request has been provided to the appropriate South Carolina State officials.

If you have any questions concerning the enclosed information, or there is anything else we can provide to assist in this effort, please contact Ms. Judith Twiggs at (704) 382-8897.

Very truly yours,

M.S. Tuckman

M.S. Tuckman
Senior Vice President
Nuclear Generation

jgt/Attachments
U.S. NRC

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M.S. Tuckman, being duly sworn, states that he is Senior Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regularory Commission this revision to the Catawba Nuclear Station Facility Operating Licenses NPF-35 and NPF-52; and that all the statements and matter set forth herein are true and correct to the best of his knowledge.

M.S. Tuckman

M.S. Tuckman, Senior Vice President

Subscribed and sworn to before me this 19th day of SEPTEMBER, 1994.

Mary P. Nelms

Notary Public

My Commission Expires:

JAN 22, 1996

ATTACHMENT I
PROPOSED TECHNICAL SPECIFICATION CHANGES

This section contains the proposed modifications to the CNS Technical Specifications. In general, these changes increase the initial fuel enrichment limit and establish restricted loading patterns, and associated burnup criteria, for qualifying fuel in the Catawba Spent Fuel Pools. These changes are necessary to improve core reload designs and increase operational flexibility, while at the same time maintaining acceptable criticality safety margin and decay heat removal capabilities. In addition, several administrative changes have been included in order to provide clarity to the Specifications and bring them more in line with STS format. A description of each of the changes being requested is given below.

The accompanying FSAR changes will be incorporated at the next annual revision following approval of this submittal. These changes are identified and discussed in Section VIII of Attachment IV.

1. The Technical Specification Index is being changed to add Specifications 3/4.9.12 and 3/4.9.13, accompanying Tables 3.9-1 and 3.9-2, and Figure 3.9-1. This change is purely administrative in nature.

2. Specification 3/4.9.12, Spent Fuel Pool (SFP) Boron Concentration is being added to establish an explicit SFP boron concentration limit, where one does not exist, as well as to establish a consistent LCO for SFP boron concentration for all modes operation. By allowing this limit to be specified in the COLR, the change reduces the possibility of a dilution event since all other potential sources of borated water to the SFP are also specified in the COLR. It also provides consistency with other operational, cycle specific limits. This change is being made in order to accommodate the more complex SFP storage requirements and provide clarity to the Specifications, as well as increase operational flexibility. The change also provides more consistency with STS format.

3. Specification 3/4.9.13, accompanying Tables 3.9-1 and 3.9-2, and Figure 3.9-1 are being added to establish restricted loading patterns (with appropriate interface restrictions) for spent fuel storage and associated burnup criteria. The proposed changes are necessary to increase the efficiency of fuel storage while at the same time ensuring that acceptable criticality safety margin and decay heat removal capabilities are maintained. The format of these changes is also more in line with STS format. The technical basis for these changes and the associated criticality analysis are described in detail in Attachment IV.

4. The BASES for Sections 3/4.9.12 and 3/4.9.13 of the Technical Specifications has been added to reflect the addition of the corresponding Specifications and to more fully explain the basis for each LCO, Action Statement and Surveillance Requirement covered by these Specifications. Paragraph 3 of the BASES explains the acceptability of using less reactive fuel components or non-fuel components in designated fuel assembly locations and non-fuel components in empty cell locations, as this would ensure the reactivity limits are met while increasing operational flexibility. In addition, the last paragraph specifies the limit for maximum fuel enrichment, 5.00 weight %, as the basis for all fuel storage requirements imposed by Technical Specification 3/4.9.13 and to describe appropriate methods for interpolating the data provided in Tables 3.9-1 to 3.9-5.

The proposed modifications to the BASES Section are also more consistent with those in STS.

5. Technical Specification 5.6, Fuel Storage, has been changed to reflect appropriate limits for criticality analysis for fuel storage. This change allows increased operational flexibility, while maintaining acceptable criticality safety margin. In addition the Specifications have been reformatted to bring them more in line with STS format.

a. Specification 5.6.1 has been changed to allow for use of $k_{eff} \leq 0.98$ under optimum moderation conditions in the rack design criteria for new fuel storage racks. Actual calculations have shown that $k_{eff} \leq 0.95$, under all storage conditions however, this change allows increased flexibility when performing criticality analyses and is consistent with the criteria currently specified in ANSI-ANS57.3, 1983 and STS.