



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 135 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 129 TO FACILITY OPERATING LICENSE NPF-52
DUKE POWER COMPANY, ET AL.
CATAWBA NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated June 17, 1993, as supplemented July 5, 1995, Duke Power Company, et al. (the licensee), submitted a request for changes to the Catawba Nuclear Station, Units 1 and 2, Technical Specifications (TS). The requested changes would revise TS 5.3.1, "Fuel Assemblies" to provide flexibility in the repair of fuel assemblies containing damaged and leaking fuel rods by reconstituting the assemblies in accordance with the guidance in Generic Letter (GL) 90-02, Supplement 1, "Alternative Requirements For Fuel Assemblies In The Design Features Section Of Technical Specifications" issued on July 31, 1992. Currently, TS 5.3.1 requires that each fuel assembly contain 264 fuel rods clad with Zircaloy-4 and is consistent with the guidance provided in the initial GL 90-02 issued on February 1, 1990. Subsequent to the issuance of GL 90-02, the staff found that the GL had prompted many licensees to incorrectly assume that their currently approved analytical methods could be extended to proposed configurations permitted by the model TS in GL 90-02. This resulted in the need to perform plant-specific reviews to allow necessary fuel reconstitution. Therefore, the staff issued Supplement 1 to GL 90-02 to clarify the limitations on the application of currently NRC-approved analytical methods used in the analysis of reconstituted fuel. The licensee's application of June 17, 1993, as supplemented July 5, 1995, responds to the guidance of GL 90-02, Supplement 1. The application is also generally consistent with the format and content of the improved Standard TS for Westinghouse plants provided in NUREG-1431.

2.0 EVALUATION

The proposed changes provide flexibility in the repair of fuel assemblies containing damaged and leaking fuel rods by reconstituting the assemblies. This is desirable because it permits timely removal of fuel rods that are found to be leaking during a refueling outage or are determined to be probable sources of future leakage.

As discussed in GL 90-02, Supplement 1, the model TS in GL 90-02 were in error, since a broad range of fuel configurations were identified that extend well beyond the scope of applications that have been justified by the tests and analyses for the fuel design and the design methods currently approved by the NRC. Current NRC-approved methodologies apply to only a few of the reconstituted fuel configurations allowed for by the model TS in GL 90-02. The extreme range of the reconstituted fuel configurations allowed for by the GL 90-02 model TS is outside the scope of application of NRC-approved methodologies. Applying these approved methods to configurations for which they were not intended, would lead to safety concerns about the conformance of the fuel assembly to specified acceptable fuel design limits (SAFDL) that are necessary to preclude the fuel cladding from failing. Supplement 1 to GL 90-02 clarifies that, when revising TS to permit fuel reconstitution, licensees need to justify the applicability of existing NRC-approved methodology or develop a modified methodology which is applicable for the safety evaluation in order to ensure that proposed configurations of reconstituted fuel assemblies conform to the SAFDL.

As noted in Supplement 1 to GL 90-02, the staff considers an NRC-approved methodology to be any methodology that the NRC staff has explicitly approved in a written safety evaluation, or a plant-specific TS basis. That NRC-approved methodology must be used only for the purpose and the scope of application specified in the reviewed document as approved or modified in the NRC-approval documentation. In general, the scope of application for generic methods is limited to fuel configurations that are represented by fuel assembly test configurations used to validate an approved methodology.

The licensee's application of June 17, 1993, proposed to delete the part of TS 5.3.1 that specified the enrichment of the fuel. Section 182.a of the Atomic Energy Act of 1954, as amended (the Act), "License Applications," states, in part:

In connection with applications for licenses to operate production or utilization facilities, the applicant shall state such technical specifications, including information of the amount, kind and source of special nuclear materials required, the place of the use, the specific characteristics of the facility, and such other information as the Commission may, by rule or regulation, deem necessary in order to enable it to find that utilization or production of special nuclear material will be in accord with common defense and security of the public. Such technical specifications shall be a part of any license issued.

The fuel enrichment information indirectly quantifies the amount of special nuclear material in use. Consistent with the Section 182.a of the Act, this information must be controlled in the TS. Since a maximum value of the fuel enrichment is not otherwise contained in the Catawba TS, the licensee supplemented its application by letter dated July 5, 1995, to reinstate the original part of TS 5.3.1 specifying the enrichment and it also increased the

clad fuel rods which is consistent with the wording in 10 CFR 50.46. The staff's technical evaluation of increasing the enrichment limit is contained in amendments to the facility license issued on August 31, 1995.

The licensee has proposed changes to TS 5.3.1 that are consistent with model TS provided in Supplement 1 to GL 90-02, and are also generally consistent with the format and content of the improved Standard TS for Westinghouse plants provided in NUREG-1431, as noted above. On the basis of its review of this matter, the staff finds that the above changes to the TS for Catawba, Units 1 and 2, are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on August 28, 1995 (60 FR 44515).

Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant impact on the quality of the human environment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: September 18, 1995