September 18, 1995

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Mr. William R. McCollum
Site Vice President
Catawba Nuclear Station
Duke Power Company
4800 Concord Road
York, South Carolina 29745-9635

SUBJECT: ISSUANCE OF AMENDMENTS - CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (TAC NOS. M86929 AND M86930)

Dear Mr. McCollum:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 135 to Facility Operating License NPF-35 and Amendment No. 129 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated June 17, 1993, as supplemented July 5, 1995.

The amendments revise TS Section 5.3.1 "Fuel Assemblies." The revisions are generally consistent with Generic Letter 90-02, Supplement 1, "Alternative Requirements for Fuel Assemblies in the Design Features Section of Technical Specifications" and with the format and content of the improved Standard TS for Westinghouse Plants provided in NUREG-1431.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by:
Robert E. Martin, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosures:
1. Amendment No. 135 to NPF-35
2. Amendment No. 129 to NPF-52
3. Safety Evaluation
cc w/encl: See next page

DOCUMENT NAME: **G:\CATAWBA\CAT86929.AMD**

| OFFICE | DRPE/PD22/LA | DRPE/PD22/PM | OGC | DRPE/DP22/D |
|---|---|---|---|---|
| NAME | L.BERRY | R.MARTIN | | H.BERKOW |
| DATE | 9/6 /95 | 9/6 /95 | 9/12 /95 | 9/15 /95 |
| COPY | YES NO | YES NO | YES NO | YES NO |

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

September 18, 1995

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Site Vice President
Catawba Nuclear Station
Duke Power Company
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Robert E Martin

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cc w/encl: See next page

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Duke Power Company

Catawba Nuclear Station

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

DUKE POWER COMPANY

NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION

SALUDA RIVER ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 135
License No. NPF-35

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-35 filed by the Duke Power Company, acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. (licensees), dated June 17, 1993, as supplemented July 5, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-35 is hereby amended to read as follows:

   Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 135 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Duke Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Victor Nerses for

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: September 18, 1995

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

DUKE POWER COMPANY

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 129
License No. NPF-52

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-52 filed by the Duke Power Company, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated June 17, 1993, as supplemented July 5, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-52 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 129 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Duke Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: September 18, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 135

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 129

FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised pages are identified by Amendment number and contains vertical lines indicating the areas of change.

| Remove Page | Insert Page |
|---|---|
| 5-6 | 5-6 |

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment vessel is designed and shall be maintained for a maximum internal pressure of 15 psig and a temperature of 328°F.

## 5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of cylindrical zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum nominal enrichment of 5.0 weight percent U-235 with a maximum tolerance of ± .05 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material of which 102 inches shall be 100% boron carbide and remaining 40-inch tip shall be 80% silver, 15% indium, and 5% cadmium.

For Units 1 and 2, all control rods shall be clad with stainless steel tubing, except for Unit 2, a maximum of one Rod Cluster Control Assembly may have Inconel clad control rods.

## 5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

a. In accordance with the Code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
b. For a pressure of 2485 psig, and
c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 12,040 ± 100 cubic feet at a nominal $T_{avg}$ of 525°F.

## 5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown in Figure 5.1-1.

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.

Principal Contributor: R. E. Martin

Date: September 18, 1995