Docket Nos. 50-413
and 50-414

July 13, 1990

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
Post Office Box 1007
Charlotte, North Carolina 28201-1007

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NPF-35 AND AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE NPF-52 - CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (TACS 76058/76059)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 76 to Facility Operating License NPF-35 and Amendment No. 70 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated February 7, 1990, as supplemented April 12, 1990.

The amendments revise TS 5.3.2, "Design Features/Control Rod Assemblies." The revision provides the flexibility to withdraw the inconel clad rod cluster control assembly (RCCA) and replace it with a Westinghouse 17x17 RCCA should unexpected wear be discovered during future inspections.

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

Sincerely,

/s/

Kahtan N. Jabbour, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 76 to NPF-35
2. Amendment No. 70 to NPF-52
3. Safety Evaluation

cc w/enclosures:
See next page

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DATED: July 13, 1990

AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NPF-35 - Catawba Nuclear Station, Unit 1
AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE NPF-52 - Catawba Nuclear Station, Unit 2

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

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. 76
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 February 7, 1990, as supplemented April 12, 1990, 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. 76 , are hereby incorporated into the license. The licensee 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification Changes

Date of Issuance: July 13, 1990

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

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. 70
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 February 7, 1990, as supplemented April 12, 1990, 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. 70 , are hereby incorporated into the license. The licensee 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification Changes

Date of Issuance: July 13, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 76

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 70

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 page is identified by Amendment number and contains a vertical line indicating the area 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 core shall contain 193 fuel assemblies with each fuel assembly nominally containing 264 fuel rods clad with Zircaloy-4, except that substitutions of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in fuel assemblies if justified by cycle-specific reload analyses using NRC-approved methodology. Should more than 30 rods in the core, or 10 rods in any assembly, be replaced per refueling, a special report describing the number of rods replaced will be submitted to the Commission pursuant to Specification 6.9.2 within 30 days after cycle startup. Each fuel rod shall have a nominal active fuel length of 144 inches. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.0 weight percent U-235 with a maximum enrichment tolerance of ± 0.05 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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NPF-35

AND AMENDMENT NO. 70 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

On May 23, 1989, the NRC issued License Amendments 64 and 58 to Facility Operating Licenses NPF-35 and NPF-52 for Catawba Nuclear Station, Units 1 and 2, respectively. These amendments allowed Duke Power Company, et al. (the licensee) to conduct a demonstration program at Catawba Unit 2 regarding interface compatibility between three rod cluster control assemblies (RCCAs) having a specialized clad coating or plating, supplied by Babcock and Wilcox Fuel Company (BWFC), and Westinghouse fuel assemblies which have the conventional clad. The revision to the Technical Specifications (TSs) involved changing the description of the RCCAs in Section 5.3.2, "Design Features/Control Rod Assemblies" for Catawba Unit 2 only. Unit 1 was included because the TSs for both units are combined in one document.

By letter dated February 7, 1990, and supplemented April 12, 1990, the licensee is proposing a revision in TS 5.3.2 which would allow the option to withdraw the inconel clad RCCA from the Catawba Unit 2 core and replace it with a Westinghouse 17x17 RCCA if unexpected wear of the inconel RCCA is discovered during forthcoming inspections. This request would involve changing the description of the RCCAs for Catawba Unit 2 only. Unit 1 is included because the TSs for both units are combined in one document.

2.0 EVALUATION

The licensee is currently conducting an RCCA demonstration program at Catawba Unit 2. Three 17x17 hybrid boron carbide (B4C) RCCAs supplied by BWFC having coatings or platings with special wear resistant characteristics were inserted into the Unit 2 core at the beginning-of-cycle (BOC) 3. Two of the assemblies have Armaloy plated 304 stainless steel cladding on the rods, and the third has a chromium carbide coated Inconel 625 cladding. The basic Westinghouse RCCA design features were maintained to make the primary interface features similar.

The objectives of the demonstration program are: (1) to demonstrate the compatibility of the BWFC RCCAs with Westinghouse internals, (2) to demonstrate that BWFC RCCAs function as required during scrams and stepping exercises, and (3) to determine the wear characteristics of various RCCA clad coatings as opposed to the conventional clad materials.

The licensee will perform wear measurements on the BWFC RCCAs and the upper internals guide structures, during end-of-cycles (EOC) 3, 4, 5 and 6 refueling outages, to quantify the performance of BWFC RCCAs relative to clad wear and

to determine the impact of the wear resistant coatings on the mating surfaces of the upper internals.

The NRC staff review finds that the proposed revision to TS 5.3.2 would correctly describe the design features relevant to the RCCAs and would provide the flexibility to withdraw the demonstration inconel clad assembly should unexpected wear be discovered during future inspections. If this is the case, the assembly would be replaced with a Westinghouse 17x17 RCCA. The Final Safety Analysis Report (FSAR) Chapter 15 accidents were evaluated assuming all RCCAs were supplied by Westinghouse. Furthermore, all the RCCAs should perform in accordance with the Catawba TS limits.

Based on its review, the NRC staff concludes that the proposed TS revision for Catawba Unit 2 has no adverse impact on safety and does not pose an undue risk to public health and safety, and is, therefore acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to the requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

The Commission's proposed determination that the amendments involve no significant hazards consideration was published in the Federal Register (55 FR 18411) on May 2, 1990. No public comments were received, and the State of South Carolina did not have any comments.

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: K. Jabbour, PDII-3/DPR-I/II

Dated: July 13, 1990