

May 23, 1989

Docket Nos.: 50-413
and 50-414

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

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NO. 64 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NPF-52 - CATAWBA
NUCLEAR STATION, UNITS 1 AND 2 (TACS 72886/72887)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 64 to Facility Operating License NPF-35 and Amendment No. 58 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated April 6, 1989, as supplemented April 21, 1989.

The amendments modify the Technical Specifications to identify special Rod Cluster Control Assemblies which will be inserted in the Unit 2 core prior to Cycle 3 operation.

A copy of the related safety evaluation supporting Amendment No. 64 to Facility Operating License NPF-35 and Amendment No. 58 to Facility Operating License NPF-52 is enclosed.

Notice of issuance of amendments will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

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

Enclosures:

- 1. Amendment No. 64 to NPF-35
- 2. Amendment No. 58 to NPF-52
- 3. Safety Evaluation

cc w/enclosures:
See next page

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PM:PDII-3
KJabbour:ls
5/3/89

PDII-3/DRPI/II
DMatthews
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2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachments to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-35 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 64, 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

s/L. Crocker

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: May 23, 1989

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DATED: May 23, 1989

AMENDMENT NO. 64 TO FACILITY OPERATING LICENSE NPF-35 - Catawba Nuclear Station, Unit 1
AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NPF-52 - Catawba Nuclear Station, Unit 2

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S. Varga

14-E-4

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D. Matthews

14-H-25

M. Rood

14-H-25

K. Jabbour

14-H-25

OGC-WF

15-B-18

B. Grimes

9-A-2

E. Jordan

MNBB-3302

W. Jones

P-130A

T. Meek (8)

P1-137

ACRS (10)

P-135

GPA/PA

17-F-2

ARM/LFMB

AR-2015

E. Butcher

11-F-23

D. Hagan

MNBB-3302

M. McCoy

8-E-23

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

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 58, 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

s/L. Crocker

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: May 23, 1989

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LA:RDII-3
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KNS
PM:PDII-3
KJabbour:ls
5/13/89

OGC *OK STATE of*
SEC def issuance
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5/5/89 *for* DMatthews
5/12/89

Mr. H. B. Tucker
Duke Power Company

Catawba Nuclear Station

cc:

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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. 64
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 April 6, 1989, as supplemented April 21, 1989, 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.

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

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 64, 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



for 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: May 23, 1989



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. 58
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 April 6, 1989, as supplemented April 21, 1989, 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 attachments to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 58, 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



for 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: May 23, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 64

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 58

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.

Amended Page

5-6

DESIGN FEATURES

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 Unit 1, all control rods shall be clad with stainless steel tubing.

For Unit 2, all control rods, except for the control rods in one Rod Cluster Control Assembly (RCCA), shall be clad with stainless steel tubing. The remaining Rod Cluster Control Assembly control rods shall be clad with Inconel.

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 a 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 \pm 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. 64 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 58 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 April 6, 1989, and supplemented April 21, 1989, Duke Power Company, et al., (the licensee) proposed changes to the Catawba Units 1 and 2 Technical Specifications (TSs) to identify special Rod Cluster Control Assemblies (RCCAs) which will be inserted in the Unit 2 core prior to Cycle 3 operation. Three new assemblies will be used as part of a proposed demonstration program.

The objective of the program is to demonstrate the interface compatibility and successful operating experience with control rods having a specialized clad coating or plating and to compare the wear characteristics of wear resistant RCCA coating with conventional RCCA clad materials. The TS changes are necessary to identify the insertion of the demonstration assemblies in the Catawba Unit 2 core for the duration of the program. These changes would involve changing the description of the Control Rod Assemblies in Section 5.3.2 of the TSs for Catawba Unit 2 only. Unit 1 is included because the TSs for both units are combined in one document.

The April 21, 1989, letter clarified certain aspects of the request. Therefore, the substance of the changes noticed in the Federal Register and the proposed no significant hazards consideration determination were not affected.

2.0 EVALUATION

The Catawba units presently have RCCAs supplied by Westinghouse which have a conventional 304 stainless steel cladding material. The licensee is pursuing the possible use of Babcock and Wilcox Fuel Company (BWFC) designed 17x17 hybrid boron-carbide (B4C) control rod assemblies which have coatings or platings with special wear resistant characteristics. The initial phase of the demonstration program will involve the insertion of three specialized RCC assemblies in the Unit 2 core starting with reload Cycle 3. Two of the assemblies will have Armaloy plated 304 stainless steel cladding on the rods and the third will have a chromium carbide coated Inconel 625 cladding. The basic Westinghouse RCCA design features are maintained to make the primary interface features similar.

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The B4C absorber pellet diameter and stack length are the same in the demonstration assemblies and the base Westinghouse RCCAs. The lower 12 inches of the Ag-In-Cd absorber stack has a 0.007-inch reduction in absorber diameter which has a potential impact on shutdown margin. The licensee has stated that the net impact on shutdown margin assuming a full core of BWFC designed rods would be less than 0.004 percent change in reactivity. For only three assemblies, the effect would be negligible. The new assemblies are lighter in weight by one to three pounds. This results in a slight decrease in scram drop time. However, the new rods are subject to the same testing program prior to startup to ensure the TS requirements on scram time are met. The staff finds this acceptable. The remaining RCCA physical characteristics other than coating or plating thickness are unchanged from the original assemblies. The BWFC RCCAs will be placed in shutdown bank locations through the duration of the demonstration program. The specific locations have been identified as coordinates J-03, G-03 and J-13 on the loading pattern diagram (Figure 4.3.2-5A in the Catawba Final Safety Analysis Report). The operating elevation of the shutdown bank RCCAs is essentially constant during operation. Under these conditions, there is no overlap between the coated region and the fuel assembly guide tube except during startup and shutdown operations. Since sufficient shutdown margin and rod worth is maintained by equivalent absorber material, the reactivity concern is minimized.

The TS changes proposed for Catawba Unit 2 would identify the use of the specially-clad RCCAs and would correctly describe the design features relevant to the control rod assemblies.

Based on its review, the staff concludes that the insertion of three demonstration RCCAs in Catawba Unit 2 has no adverse impact on safety and does not pose an undue risk to the public health and safety, and is, therefore, acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes 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 exposure. The NRC staff has made a determination 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 made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register

(54 FR 15827) on April 19, 1989. The Commission consulted with the state of South Carolina. 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 Contributor: K. Jabbour, PDII-3/DRP-I/II
M. McCoy, SRXB/DEST

Dated: May 23, 1989