

Docket Nos. 50-413
and 50-414

June 14, 1990

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

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NO. 75 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 69 TO FACILITY OPERATING LICENSE NPF-52 - CATAWBA
NUCLEAR STATION, UNITS 1 AND 2 (TACS 76665/76666)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 75 to Facility Operating License NPF-35 and Amendment No. 69 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 April 23, 1990, as supplemented May 17 and June 4, 1990.

The amendments revise TS 3/4.9.11, "Fuel Handling Ventilation Exhaust System," and its associated Bases. The revision changes the carbon adsorber test method to ensure that the fuel pool ventilation filters have a decontamination efficiency of greater than or equal to 95% under all postulated operating conditions.

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,

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

Enclosures:

1. Amendment No. 75 to NPF-35
2. Amendment No. 69 to NPF-52
3. Safety Evaluation

cc w/enclosures:
See next page

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RIngram/*W*
6/6/90

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DATED: June 14, 1990

AMENDMENT NO. 75 TO FACILITY OPERATING LICENSE NPF-35 - Catawba Nuclear Station, Unit 1
AMENDMENT NO. 69 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. 75
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 23, 1990, as supplemented May 17 and June 4, 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.

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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. 75, 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: June 14, 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. 69
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 23, 1990, as supplemented May 17 and June 4, 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. 69, 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: June 14, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 75

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 69

FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

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

Remove Pages

3/4 9-15

B 3/4 9-3

Insert Pages

3/4 9-15

3/4 9-16

B 3/4 9-3

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative activated carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, as supplemented by ASTM D3803-86, Test Method "A"*, for a methyl iodide penetration of less than 0.71% and
 - 3) Verifying a system flow rate of 16,565 cfm \pm 10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of activated carbon adsorber operation in any train by verifying, within 31 days after removal, that a laboratory analysis of a representative activated carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, as supplemented by ASTM D3803-86, Test Method "A"*, for a methyl iodide penetration of less than 0.71%
- d. At least once per 18 months for each train by:
- 1) Verifying that the pressure drop across the combined HEPA filters, activated carbon adsorber banks, and moisture separators is less than 8 inches Water Gauge while operating the system at a flow rate of 16,565 cfm \pm 10%.
 - 2) Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to $\frac{1}{4}$ inch Water Gauge relative to the outside atmosphere during system operation,
 - 3) Verifying that the filter cooling bypass valves can be manually opened, and
 - 4) Verifying that the heaters dissipate 80 + 8 kW/-17.3 kW.**

*Use of ASTM D3803-86, Test Method "A" as a supplement applies until August 26, 1991. Thereafter, the surveillance requirement shall read, "...meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%."

**80 + 8 kW/-17.3 kW applies until August 26, 1991. Thereafter, the surveillance requirement shall read "Verifying that the heaters dissipate 80 \pm 8 kW."

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- e. After each complete or partial replacement of a HEPA filter bank in any train, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 16,565 cfm \pm 10%; and
- f. After each complete or partial replacement of an activated carbon adsorber bank in any train, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% (Unit 1), 0.05% (Unit 2) in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 16,565 cfm \pm 10%.

REFUELING OPERATIONS

BASES

3/4.9.9 and 3/4.9.10 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gas activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

3/4.9.11 FUEL HANDLING VENTILATION EXHAUST SYSTEM

The limitations on the Fuel Handling Ventilation Exhaust System ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and activated carbon adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. ASTM D3803-86, Test Method "A" will be used for surveillance testing (laboratory test) for methyl iodide penetration in lieu of the laboratory test specified in Regulatory Guide 1.52, Rev. 2, March 1978, Regulatory Position C.6.a. The ASTM D3803-86 test method uses a relative humidity of 95% at 30°C. The use of this test and the acceptance criterion of a methyl iodide penetration of less than 0.71% are consistent with assumed decontamination efficiencies of 95%. This change resulted from the lower system heater capacity during degraded voltage conditions. The use of ASTM D3803-86 will apply until August 26, 1991. This date corresponds to the next due date for the 18-month surveillance on Unit 2. The Unit 2 date is used for both units because the next 18-month inspection date for Unit 1, December 13, 1990, will not allow for sufficient time to evaluate ASTM D3803-89.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 75 TO FACILITY OPERATING LICENSE NPF-35
AND AMENDMENT NO. 69 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 23, 1990, as revised and supplemented May 17 and June 4, 1990, Duke Power Company, et al., (the licensee) proposed amendments to the operating licenses for Catawba Nuclear Station, Units 1 and 2, to revise surveillance requirements (SRs) with respect to the standard used for laboratory testing of the carbon adsorber in the filter of the Fuel Handling Ventilation Exhaust System. Presently, for both Units 1 and 2, the carbon adsorber is periodically tested by removing a carbon sample from the filter and performing a laboratory analysis using the testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%. The amendments would revise SRs 4.9.11.2b.2) and 4.9.11.2c to supplement the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52 by specifying use of "Test Method A" of ASTM D3803-86 for a methyl iodide penetration of less than 0.71%. SR 4.9.11.2d.4) would be revised to change the heat dissipation acceptance criteria for the heaters from $80 \pm 8\text{kw}$ to $80 + 8\text{kw}/- 17.3\text{kw}$. Associated TS Bases 3/4.9.11 would be supplemented to discuss use of Test Method A of ASTM D3803-86 for Units 1 and 2.

The licensee has recently discovered that, under certain postulated low voltage conditions, sufficient power may not be supplied to the Fuel Handling Ventilation Exhaust System heaters to maintain the relative humidity of the gases entering the carbon adsorber beds below 70% in accordance with existing SR 4.9.11.2. In order to satisfy the Technical Specifications (TSs), the licensee restricted the flow to 17,400 cfm as an upper limit and 14,909 cfm as a lower limit.

2.0 EVALUATION

During a review of the heating, ventilation and air conditioning systems at Catawba Nuclear Station, the licensee discovered that the Fuel Handling Ventilation Exhaust System heaters were not conservatively sized for all postulated operating modes. During postulated low voltage conditions, sufficient power would not be supplied to the heaters to maintain the relative humidity of the air entering the carbon adsorber beds below 70% when the flowrate is at the maximum value, 18,222 cfm, allowed by TSs. The licensee assessed potential

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solutions and determined that the problem could be mitigated by reducing its flowrate within its allowable range (i.e., less than 17,400 cfm) and limiting the fuel building temperature to less than 100°F at 100% relative humidity. This reduced upper limit places an unnecessarily restrictive operating margin on the system.

The licensee stated that the proposed standard, ASTM D3803-86, "Test Method A" will require testing of carbon samples at 30 degrees-C and at 95% relative humidity for a carbon adsorber bed decontamination efficiency of 95%. The methyl iodide penetration would be changed from 1% to 0.71%. Reducing the methyl iodide penetration to 0.71% ensures a carbon adsorber decontamination factor of 95%, that is assumed in the existing Catawba FSAR Dose Analysis for the Fuel Handling Ventilation Exhaust System. The proposed methyl iodide penetration of 0.71% instead of 1% also increases the penetration safety factor of the system from a factor of 5 to 7. The requirements of the new standard compensate for the reduced capacity of the system heaters as a result of the degraded voltage. Also, the heat dissipation value was changed to reflect low voltage conditions.

For the reasons described above, this change will conservatively ensure that calculated offsite and onsite doses are not adversely affected while allowing the existing 18,222 cfm maximum system flowrate.

The NRC staff has reviewed the licensee's proposed changes. We agree with the licensee that use of Test Method A as a supplement to Regulatory Guide 1.52 provides an adequate compensation for the reduced voltage to the fuel pool ventilation system heaters and provides reasonable assurance that the carbon efficiency will be maintained such that potential onsite and offsite doses will not be increased relative to the efficiency and doses associated with existing TS requirements. Moreover, we find that the use of Test Method A as a supplement to Regulatory Guide 1.52, as proposed, meets General Design Criterion 42 and is consistent with the intent of the Standard Technical Specifications. The proposed changes are, therefore, acceptable.

The NRC is continuing to review the guidance of Regulatory Guide 1.52 for periodic updating, including its references to appropriate industry standards such as ASTM D3803-86 and later versions of ASTM D3803. We note that, like the current TS requirements, ASTM D3803-86 Test Method A criteria do not address an equilibration period for testing samples from used carbon adsorbers. A later version, ASTM D3803-89, published in February 1990, addresses this subject. Until the significance of an equilibration period during testing of used carbon samples is better understood and the staff's present review of Regulatory Guide 1.52 and associated standards is completed, we conclude that our approval of the proposed TS changes for Catawba should be limited in duration as requested by the licensee, and should apply only until August 26, 1991, which is sufficient for at least one 18-month inspection of the system as required by SR 4.9.11.2. Thereafter, SR 4.9.11.2 shall read the same as before our approval of the proposed changes. The licensee has provided a footnote to the SR to satisfy this objective and the NRC staff finds the footnote acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes 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 and changes in surveillance requirements. 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 18198) on May 1, 1990. The clarifications to the Technical Specifications provided by the licensee's subsequent letters of May 17 and June 4, 1990, did not alter the initial determination of no significant hazards consideration. 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 Contributors: K. Jabbour, PDII-3/DPR-1/II
C. Nichols, SPLB/DST

Dated: June 14, 1990