March 27, 1987

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. 24 to Facility Operating License NPF-35 and Amendment No. 14 to Facility Operating License NPF-52 - Catawba Nuclear Station, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 24 to Facility Operating License NPF-35 and Amendment No. 14 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated August 7, 1985, and supplemented November 8, and December 4 and 20, 1985.

The amendments change Technical Specification (TS) Table 3.2-1 "DNB parameters" for the Reactor Coolant System average temperature and pressurizer pressure so as to provide for direct comparison of measured values with parameter limits. The amendments also change TS bases 3/4.2.5 "DNB Parameters" associated with Table 3.2-1. Based on a telephone discussion on March 18, 1987, with Mr. Roger W. Ouellette of your company, the last sentence in the bases was changed to read "Indication instrumentation measurement uncertainties are accounted for in the limits provided in Table 3.2-1." The amendments are effective as of their date of issuance.

A copy of the related safety evaluation supporting Amendment No. 24 to Facility Operating License NPF-35 and Amendment No. 14 to Facility Operating License NPF-52 is enclosed.

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

Sincerely,

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

Enclosures:
1. Amendment No. 24 to NPF-35
2. Amendment No. 14 to NPF-52
3. Safety Evaluation

cc w/encl:
See next page

DISTRIBUTION:
See attached page

PWR#4:DPWR-A	PWR#4/DPWR-A	PWR#4/DPWR-A
MDuncan/rad	KJabbour	BJYoungblood
03/19/87	03/19/87	03/27/87

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.

FOR THE NUCLEAR REGULATORY COMMISSION

151

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

Attachment:
Technical Specification Changes

Date of Issuance: March 27, 1987

PWR#4/DPWR-A	PWR#4/DPWR-A	OGC-Bethesda	PWR#4/BPWR-A
MDuncan/rad	KJabbour		BJYoungblood
03/19/87	03/19/87	03/23/87	03/25/87

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FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

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Technical Specification Changes

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PWR#4/DPWR-A	PWR#4/DPWR-A	OGC-Bethesda	PWR#4/DPWR-A
MDuncan/rad	KJabbour		BJYoungblood
03/19/87	03/19/87	03/23/87	03/27/87

March 27, 1987

AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NPF-35 -
CATAWBA NUCLEAR POWER STATION, UNIT 1
AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NPF-52 -
CATAWBA NUCLEAR POWER STATION, UNIT 2

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ACRS (10)
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

March 27, 1987

Docket Nos.: 50-413
and 50-414

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The amendments change Technical Specification (TS) Table 3.2-1 "DNB parameters" for the Reactor Coolant System average temperature and pressurizer pressure so as to provide for direct comparison of measured values with parameter limits. The amendments also change TS bases 3/4.2.5 "DNB Parameters" associated with Table 3.2-1. Based on a telephone discussion on March 18, 1987, with Mr. Roger W. Ouellette of your company, the last sentence in the bases was changed to read "Indication instrumentation measurement uncertainties are accounted for in the limits provided in Table 3.2-1." The amendments are effective as of their date of issuance.

A copy of the related safety evaluation supporting Amendment No.24 to Facility Operating License NPF-35 and Amendment No. 14 to Facility Operating License NPF-52 is enclosed.

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Kahtan Jabbour

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

Enclosures:
1. Amendment No. 24 to NPF-35
2. Amendment No. 14 to NPF-52
3. Safety Evaluation

cc w/encl:
See next page

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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. 24
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 August 7, 1985, and supplemented November 8, and December 4 and 20, 1985, 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, as amended, 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 license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   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-35 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 24 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Kahtan Jabbour

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

Attachment:
Technical Specification Changes

Date of Issuance: March 27, 1987

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. 14
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 August 7, 1985, and supplemented November 8, and December 4 and 20, 1985, 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, as amended, 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 license amendment will not be inimical to the common defense and security or to the health and safety of the public;

   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 and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 14 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Kahtan Jabbour

Kahtan Jabbour, Project Manager
PWR Project Directorate No. 4
Division of PWR Licensing-A

Attachment:
Technical Specification Changes

Date of Issuance: March 27, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 24

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 14

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. The corresponding overleaf pages are also provided to maintain document completeness.

Amended Page	Overleaf Page
3/4 2-16	3/4 2-15
B 3/4 2-6	B 3/4 2-5

3/4.2.5 DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

a. Reactor Coolant System T_{avg}, and

b. Pressurizer Pressure.

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5 Each of the parameters of Table 3.2-1 shall be verified to be within their limits at least once per 12 hours.

TABLE 3.2-1

DNB PARAMETERS

PARAMETER		LIMITS
		Four Loops in Operation
Average Temperature		
Meter Average	- 4 channels:	$\leq$ 592°F
	- 3 channels:	$\leq$ 592°F
Computer Average	- 4 channels:	$\leq$ 593°F
	- 3 channels:	$\leq$ 593°F
Pressurizer Pressure		
Meter Average	- 4 channels:	$\geq$ 2227 psig*
	- 3 channels:	$\geq$ 2230 psig*
Computer Average	- 4 channels:	$\geq$ 2222 psig*
	- 3 channels:	$\geq$ 2224 psig*

*Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER.

HEAT FLUX HOT CHANNEL FACTOR, and REACTOR COOLANT SYSTEM FLOW RATE AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR (Continued)

When Reactor Coolant System flow rate and $F_{\Delta H}^{N}$ are measured, no additional allowances are necessary prior to comparison with the limits of Figure 3.2-3. Measurement errors of 2.1% for Reactor Coolant System total flow rate and 4% for $F_{\Delta H}^{N}$ have been allowed for in determination of the design DNBR value.

The measurement error for Reactor Coolant System total flow rate is based upon performing a precision heat balance and using the result to calibrate the Reactor Coolant System flow rate indicators. Potential fouling of the feedwater venturi which might not be detected could bias the result from the precision heat balance in a nonconservative manner. Therefore, a penalty of 0.1% for undetected fouling of the feedwater venturi is included in Figure 3.2-3. Any fouling which might bias the Reactor Coolant System flow rate measurement greater than 0.1% can be detected by monitoring and trending various plant performance parameters. If detected, action shall be taken before performing subsequent precision heat balance measurements, i.e., either the effect of the fouling shall be quantified and compensated for in the Reactor Coolant System flow rate measurement or the venturi shall be cleaned to eliminate the fouling.

The 12-hour periodic surveillance of indicated Reactor Coolant System flow is sufficient to detect only flow degradation which could lead to operation outside the acceptable region of operation shown on Figure 3.2-3.

3/4.2.4 QUADRANT POWER TILT RATIO

The QUADRANT POWER TILT RATIO limit assures that the radial power distribution satisfies the design values used in the power capability analysis. Radial power distribution measurements are made during STARTUP testing and periodically during power operation.

The limit of 1.02, at which corrective action is required, provides DNB and linear heat generation rate protection with x-y plane power tilts. A limit of 1.02 was selected to provide an allowance for the uncertainty associated with the indicated power tilt.

The 2-hour time allowance for operation with a tilt condition greater than 1.02 but less than 1.09 is provided to allow identification and correction of a dropped or misaligned control rod. In the event such action does not correct the tilt, the margin for uncertainty on F_Q is reinstated by reducing the maximum allowed power by 3% for each percent of tilt in excess of 1.

For purposes of monitoring QUADRANT POWER TILT RATIO when one excore detector is inoperable, the moveable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the QUADRANT POWER TILT RATIO. The incore detector monitoring is done with a full incore

QUADRANT POWER TILT RATIO (Continued)

flux map or two sets of four symmetric thimbles. The two sets of four symmetric thimbles is a unique set of eight detector locations. The normal locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, N-8. Alternate locations are available if any of the normal locations are unavailable.

3/4.2.5 DNB PARAMETERS

The limits on the DNB-related parameters assure that each of the parameters are maintained within the normal steady-state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a design limit DNBR throughout each analyzed transient. The indicated T_{avg} value and the indicated pressurizer pressure value correspond to analytical limits of 594.8°F and 2205.3 psig respectively, with allowance for measurement uncertainty.

The 12-hour periodic surveillance of these parameters through instrument readout is sufficient to ensure that the parameters are restored within their limits following load changes and other expected transient operation. Indication instrumentation measurement uncertainties are accounted for in the limits provided in Table 3.2-1.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 24 TO FACILITY OPERATING LICENSE NPF-35

AND AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NPF-52

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DUKE POWER COMPANY, ET AL.

INTRODUCTION

By letters dated August 7, November 8, and December 4 and 20, 1985, Duke Power Company, et al., (the licensee) proposed changes to Technical Specification (TS) Table 3.2-1, titled "DNB (departure from nucleate boiling) parameters," for Catawba Nuclear Station, Units 1 and 2. This table, associated with TS 4.2.5, specifies the operating limits for the Reactor Coolant System average temperature (T_{avg}) and the Pressurizer pressure.

The previous limits for these DNB related parameters do not account for indication instrumentation measurement uncertainties and therefore require that the measured values, as given by station indication instrumentation, be adjusted for instrumentation uncertainties prior to comparison with the parameter limits of TS Table 3.2-1. The requested amendments would adjust these parameters to include the instrumentation uncertainties, allowing direct comparison against measured values, as indicated on station instrumentation. Associated TS Bases 3/4.2.5 "DNB Parameters" would be revised to reflect the proposed changes to TS Table 3.2-1.

EVALUATION

Catawba TS 3.2.5, Limiting Condition for Operation for DNB Parameters, requires that the Reactor Coolant System average temperature and pressurizer pressure be maintained within the limits specified in Table 3.2-1. Associated surveillance specification 4.2.5 requires that these temperature and pressure parameters in Table 3.2-1 be periodically verified to be within their specified limits. Previously, Table 3.2-1 specified that the indicated coolant average temperature limit should be no higher than 592.5°F and the indicated pressurizer pressure limit should be no lower than 2220 psig for four-loop operation.

The changes to Table 3.2-1 proposed by the licensee are to provide more specific values for the "Indicated Reactor Coolant System Tavg" and the "Indicated Pressurizer Pressure." This is accomplished in the revised table by specifying different limits for indications by instrument meters or computer readout available to the station operators. For example, when all four instrumentation channels are operational, the limits for the average coolant temperature are 592°F and 593°F, respectively, for the meter average reading and the computer average reading; and the pressurizer pressure limits are 2227 psig and 2222 psig, respectively, for the meter and computer readings. Various limits are also specified for three instrumentation channels in operation.

The limits specified in the revised table are obtained from the Catawba safety analysis and adjusted by appropriate uncertainties in the indicating system. The safety analysis limits of the average coolant temperature and pressurizer pressure, which ensure no violation of the DNBR limit, are described in the Basis to TS 3/4.2.5. The plant specific instrumentation uncertainties are subtracted (or added) to these limits in the derivation of the indicated temperature and pressure limits. The licensee stated that the limit values of the coolant average temperature and pressure in the revised Table 3.2-1 were derived with the instrumentation uncertainties obtained from the Westinghouse Setpoint Methodology for Catawba and the actual indication uncertainties at the Catawba Station.

We find that proper consideration has been given in the derivation of the limits for the indicated coolant temperature and pressurizer pressure to ensure no violation of the DNBR limit. Therefore, the proposed changes to Table 3.2-1 are acceptable.

ENVIRONMENTAL CONSIDERATION

The amendments involve a change in use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes in 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 exposures. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there have been no public comments on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 the amendments.

CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (51 FR 30564) on August 27, 1986, and 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Kahtan Jabbour, PWR#4/DPWR-A
Gene Hsii, RSB/DPWR-A

Dated: March 27, 1987