

October 31, 1995

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

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SUBJECT: ISSUANCE OF AMENDMENTS - CATAWBA NUCLEAR STATION, UNITS 1 AND 2  
CHANGE TO NOTATION FOR OVERPOWER DIFFERENTIAL TEMPERATURE  
SETPOINT (TAC NOS. M93595 AND M93596)

Dear Mr. McCollum:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 137 to Facility Operating License NPF-35 and Amendment No. 131 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 September 13, 1995.

The amendments modify the notation for the overpower delta temperature (OPDT) reactor trip heatup setpoint penalty coefficient as delineated in Note 3 in TS Table 2.2-1 in order to make the nomenclature consistent with the Standard Technical Specifications and to facilitate a modification to reduce the reactor coolant system hot leg temperature as planned during the Unit 2 end-of-cycle 7 refueling outage.

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. 137 to NPF-35
2. Amendment No. 131 to NPF-52
3. Safety Evaluation

cc w/encl: See next page

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\*see previous concurrence

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

October 31, 1995

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

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Sincerely,

A handwritten signature in cursive script that reads "Robert E. Martin".

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

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1. Amendment No. 137 to NPF-35
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3. Safety Evaluation

cc w/encl: See next page

Mr. W. R. McCollum  
Duke Power Company

cc:

Mr. Z. L. Taylor  
Regulatory Compliance Manager  
Duke Power Company  
4800 Concord Road  
York, South Carolina 29745

A. V. Carr, Esquire  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242-0001

J. Michael McGarry, III, Esquire  
Winston and Strawn  
1400 L Street, NW  
Washington, DC 20005

North Carolina Municipal Power  
Agency Number 1  
1427 Meadowood Boulevard  
P. O. Box 29513  
Raleigh, North Carolina 27626-0513

Mr. Peter R. Harden, IV  
Account Sales Manager  
Westinghouse Electric Corporation  
Power Systems Field Sales  
P. O. Box 7288  
Charlotte, North Carolina 28241

County Manager of York County  
York County Courthouse  
York, South Carolina 29745

Richard P. Wilson, Esquire  
Assistant Attorney General  
South Carolina Attorney General's  
Office  
P. O. Box 11549  
Columbia, South Carolina 29211

Piedmont Municipal Power Agency  
121 Village Drive  
Greer, South Carolina 29651

Dayne H. Brown, Director  
Division of Radiation Protection  
N.C. Department of Environment,  
Health and Natural Resources  
P. O. Box 27687  
Raleigh, North Carolina 27611-7687

Catawba Nuclear Station

North Carolina Electric Membership  
Corporation  
P. O. Box 27306  
Raleigh, North Carolina 27611

Senior Resident Inspector  
4830 Concord Road  
York, South Carolina 29745

Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
101 Marietta Street, NW. Suite 2900  
Atlanta, Georgia 30323

Max Batavia, Chief  
Bureau of Radiological Health  
South Carolina Department of  
Health and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

Mr. G. A. Copp  
Licensing - EC050  
Duke Power Company  
526 South Church Street  
Charlotte, North Carolina 28242-0001

Saluda River Electric  
P. O. Box 929  
Laurens, South Carolina 29360

Ms. Karen E. Long  
Assistant Attorney General  
North Carolina Department of Justice  
P. O. Box 629  
Raleigh, North Carolina 27602

Elaine Wathen, Lead REP Planner  
Division of Emergency Management  
116 West Jones Street  
Raleigh, North Carolina 27603-1335



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. 137  
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 September 13, 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. 137, 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: October 31, 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. 131  
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 September 13, 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. 131, 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: October 31, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 137

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 131

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 vertical lines indicating the areas of change.

Remove Page

2-10

Insert Page

2-10



TABLE 2.2-1 (Continued)  
TABLE NOTATIONS (Continued)

NOTE 3: (Continued)

$K_6$  = Overpower  $\Delta T$  reactor trip heatup setpoint penalty coefficient as presented in the Core Operating Limits Report for  $T > T''$  and  $K_6 = 0$  for  $T \leq T''$ ,

$T$  = As defined in Note 1,

$T''$  = Indicated  $T_{avg}$  at RATED THERMAL POWER (Calibration temperature for  $\Delta T$  instrumentation,  $\leq 590.8^\circ F$ ),

$S$  = As defined in Note 1,

and  $f_2(\Delta I)$  is a function of the indicated differences between top and bottom detectors of the power-range neutron ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (i) for  $q_t - q_b$  between the "positive" and "negative"  $f_2(\Delta I)$  breakpoints as presented in the Core Operating Limits Report;  $f_2(\Delta I) = 0$ , where  $q_t$  and  $q_b$  are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and  $q_t + q_b$  is total THERMAL POWER in percent of RATED THERMAL POWER;
- (ii) for each percent  $\Delta I$  that the magnitude of  $q_t - q_b$  is more negative than the  $f_2(\Delta I)$  "negative" breakpoint presented in the Core Operating Limits Report, the  $\Delta T$  Trip Setpoint shall be automatically reduced by the  $f_2(\Delta I)$  "negative" slope presented in the Core Operating Limits Report; and
- (iii) for each percent  $\Delta I$  that magnitude of  $q_t - q_b$  is more positive than the  $f_2(\Delta I)$  "positive" breakpoint presented in the Core Operating Limits Report the  $\Delta T$  Trip Setpoint shall be automatically reduced by the  $f_2(\Delta I)$  "positive" slope presented in the Core Operating Limits Report.

NOTE 4: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 3.0% (Unit 1) and 3.3% (Unit 2) of Rated Thermal Power.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 137 TO FACILITY OPERATING LICENSE NPF-35  
AND AMENDMENT NO. 131 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 September 13, 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 modify the notation for the overpower delta temperature (OPDT) reactor trip heatup setpoint penalty coefficient as delineated in Note 3 in TS Table 2.2-1 in order to make the nomenclature consistent with the Standard Technical Specifications and to facilitate a modification to reduce the reactor coolant system hot leg temperature as planned during the Unit 2 end-of-cycle 7 refueling outage.

2.0 EVALUATION

The overpower differential temperature equation in TS Table 2.2-1, "Reactor Trip System Instrumentation Trip Setpoints" contains a penalty,  $K_6$ , as a function of coolant temperature ( $T$ ). The  $K_6$  penalty factor is applied whenever the temperature is above the indicated average coolant temperature ( $T_{avg}$ ) at rated thermal power. This term is identified as  $T''$  and is limited to a value of less than or equal to 590.8 °F in the TS.

The licensee proposes to reduce the reactor coolant system hot leg temperature and, in turn, the cold leg temperature and the average temperature to enhance the life of the Inconel 600 steam generator tubes in Catawba Unit 2. This would result in  $T_{avg}$  going from 590.8 °F to 587.5 °F.

It is not necessary to change the TS value for  $T''$  (the indicated  $T_{avg}$  at rated thermal power) since, if the licensee plans to operate at a  $T_{avg}$  of 587.5 °F, this value is less than the current limit value of 590.8 °F in the TS. However, if the licensee is to redefine  $T_{avg}$  as  $\leq 587.5$  °F then the definition of  $K_6$  requires revision because the penalty it represents is applied whenever the coolant temperature goes above  $T_{avg}$ . This is most practicably accomplished by changing the current fixed numerical value in the  $K_6$  definition to the parameter  $T''$ .

The change in the TS definition of  $K_6$ , as discussed above, would be consistent with the "Standard Technical Specifications for Westinghouse Pressurized Water Reactors," NUREG-0452, Revision 4a and with the "Standard Technical

Specifications - Westinghouse Plants," NUREG-1431, since both of these specifications define the threshold for applying  $K_6$  in terms of the parameter  $T''$ .

Changing the definition of  $K_6$  in this manner will have no impact from a safety perspective since the penalty on the OPDT reactor trip setpoint will be applied at a lower coolant temperature which is conservative. On the bases discussed above, the staff finds the proposed change to be 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

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 (60 FR 49933, dated September 27, 1995). 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 the amendments.

### 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: Robert E. Martin

Date: October 31, 1995