

September 1, 2005

G. R. Peterson, Vice President  
McGuire Nuclear Station  
Duke Energy Corporation  
12700 Hagers Ferry Road  
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 AND CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: ISSUANCE OF AMENDMENTS (TAC NOS. MC7545, MC7546, MC7547, AND MC7548)

Dear Mr. Peterson:

The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 231 to Renewed Facility Operating License NPF-9 and Amendment No. 213 to Renewed Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The NRC has also issued the enclosed Amendment No. 226 to Renewed Facility Operating License NPF-35 and Amendment No. 221 to Renewed 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 July 7, 2005.

The amendments revise TS 3.9.1, "Boron Concentration," to clarify the technical requirements for boron concentration when the refueling canal and the refueling cavity are not connected to the reactor coolant system.

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,

/RA/

Sean E. Peters, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369, 50-370, 50-413, and 50-414

Enclosures:

1. Amendment No. 231 to NPF-9
2. Amendment No. 213 to NPF-17
3. Amendment No. 226 to NPF-35
4. Amendment No. 221 to NPF-52
5. Safety Evaluation

cc w/encls: See next page

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cc w/encls: See next page

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Package Number: ML052100075  
Amendment Number: ML052100072  
Tech Spec Number: ML052550158

\*No legal objection

NRR-058

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SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 AND CATAWBA NUCLEAR  
STATION, UNITS 1 AND 2 RE: ISSUANCE OF AMENDMENTS (TAC NOS.  
MC7545, MC7546, MC7547, AND MC7548)

Date: September 1, 2005

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DUKE ENERGY CORPORATION

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 231  
Renewed License No. NPF-9

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. NPF-9 filed by the Duke Energy Corporation (licensee) dated July 7, 2005, 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 Renewed Facility Operating License No. NPF-9 is hereby amended to read as follows:

- (2) Technical Specifications

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 231, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Evangelos C. Marinos, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Technical Specification  
Changes

Date of Issuance: September 1, 2005

DUKE ENERGY CORPORATION

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 213  
Renewed License No. NPF-17

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility), Facility Operating License No. NPF-17 filed by the Duke Energy Corporation (licensee) dated July 7, 2005, 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 Renewed Facility Operating License No. NPF-17 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 213, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Evangelos C. Marinos, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Technical Specification  
Changes

Date of Issuance: September 1, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 231  
RENEWED FACILITY OPERATING LICENSE NO. NPF-9  
DOCKET NO. 50-369  
AND ATTACHMENT TO LICENSE AMENDMENT NO. 213  
RENEWED FACILITY OPERATING LICENSE NO. NPF-17  
DOCKET NO. 50-370

Replace the following pages of the Appendix A Technical Specifications and associated Bases with the attached revised pages. The revised pages are identified by amendment numbers and contain marginal lines indicating the areas of change.

Remove

3.9.1-1  
B 3.9.1-2  
B 3.9.1-3  
B 3.9.1-4

Insert

3.9.1-1  
B 3.9.1-2  
B 3.9.1-3  
B 3.9.1-4

DUKE ENERGY CORPORATION  
NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION  
SALUDA RIVER ELECTRIC COOPERATIVE, INC.  
DOCKET NO. 50-413  
CATAWBA NUCLEAR STATION, UNIT 1  
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 226  
Renewed 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) Renewed Facility Operating License No. NPF-35 filed by the Duke Energy Corporation, acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. (licensees), dated July 7, 2005, 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 Renewed 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. 226, which are attached hereto, are hereby incorporated into this license. Duke Energy Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Evangelos C. Marinos, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Technical Specification  
Changes

Date of Issuance: September 1, 2005

DUKE ENERGY CORPORATION  
NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1  
PIEDMONT MUNICIPAL POWER AGENCY  
DOCKET NO. 50-414  
CATAWBA NUCLEAR STATION, UNIT 2  
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 221  
Renewed 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) Renewed Facility Operating License No. NPF-52 filed by the Duke Energy Corporation, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated July 7, 2005, 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 Renewed 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. 221, which are attached hereto, are hereby incorporated into this license. Duke Energy Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Evangelos C. Marinos, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Technical Specification  
Changes

Date of Issuance: September 1, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 226

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND LICENSE AMENDMENT NO. 221

RENEWED FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

Replace the following pages of the Appendix A Technical Specifications and associated Bases with the attached revised pages. The revised pages are identified by amendment numbers and contain marginal lines indicating the areas of change.

Remove

3.9.1-1

B 3.9.1-2

B 3.9.1-3

B 3.9.1-4

Insert

3.9.1-1

B 3.9.1-2

B 3.9.1-3

B 3.9.1-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 231 TO RENEWED FACILITY OPERATING  
LICENSE NPF-9, AMENDMENT NO. 213 TO RENEWED FACILITY OPERATING  
LICENSE NPF-17, AMENDMENT NO. 226 TO RENEWED FACILITY OPERATING  
LICENSE NPF-35, AND AMENDMENT NO. 221 TO RENEWED FACILITY OPERATING  
LICENSE NPF-52  
DUKE ENERGY CORPORATION, ET AL.  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, AND  
CATAWBA NUCLEAR STATION, UNITS 1 AND 2  
DOCKET NOS. 50-369, 50-370, 50-413, AND 50-414

## 1.0 INTRODUCTION

By letter dated July 7, 2005 (Agencywide Documents Access Management System Accession No. ML0520202060), Duke Energy Corporation, et al. (DEC, the licensee), submitted a request for changes to the McGuire Nuclear Station, Units 1 and 2 (McGuire), and the Catawba Nuclear Station, Units 1 and 2 (Catawba), Technical Specifications (TS). The requested changes would modify TS 3.9.1, "Boron Concentration," to clarify the technical requirements for boron concentration when the refueling canal and the refueling cavity are not connected to the reactor coolant system (RCS).

## 2.0 REGULATORY EVALUATION

Criterion 2 of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical Specifications," requires that a limiting condition for operation be established for a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. Because the reactivity of the core is an initial condition assumed in the boron dilution accident analyses, during refueling operations, the reactor coolant system boron concentration meets Criterion 2.

TS 3.9.1, requires that a minimum boron concentration be maintained in the RCS, the refueling canal, and the refueling cavity while the plant is in Mode 6, "Refueling". These boron concentration limits ensure that a subcritical core is maintained during fuel handling operations. Violation of the limits could lead to an inadvertent criticality during Mode 6.

### 3.0 TECHNICAL EVALUATION

In its amendment request, DEC proposed to add a note to TS 3.9.1 to modify the applicability of the limiting condition for operation (LCO). Currently, the licensee's LCO states that the boron concentrations of the RCS, the refueling canal, and the refueling cavity shall be maintained within the limit specified in the core operating limit report. However, when the refueling canal and the refueling cavity are isolated from the RCS, these systems would not contribute to a boron dilution accident. Therefore, DEC proposed to add a note stating that these limits on the refueling canal and refueling cavity are only applicable when connected to the RCS.

This change, as proposed by DEC, has been addressed by the industry's Technical Specification Task Force (TSTF) in a Standard Technical Specification Traveler, TSTF-272-A, Revision 1, "Refueling Boron Concentration Clarification." In a letter dated December 21, 1999, (ML993630256) the Nuclear Regulatory Commission (NRC) staff has approved TSTF-272-A, Revision 1, stating:

This Specification limits the boron concentrations of the Reactor Coolant System (RCS), the refueling canal, and the refueling cavity during refueling to ensure that the reactor remains subcritical during MODE 6. However, when the refueling canal and refueling cavity are isolated from the RCS no potential for dilution exists. Therefore, in this condition it is not necessary to place a limit on the boron concentration in the refueling cavity and the refueling canal. The Applicability is revised with a Note which states that the limits only apply to the refueling canal and the refueling cavity when those volumes are connected to the RCS. This change is consistent with the intent of the Specification and eliminates restrictions that have no effect on safety.

Because no potential for dilution exists when the refueling canal and the refueling cavity are isolated from the RCS, the boron concentration in this configuration no longer meets Criterion 2 of 10 CFR 50.36. Therefore, the NRC staff finds it acceptable to modify the applicability of TS 3.9.1, as proposed by the licensee.

### 4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendments involve no significant hazards considerations, if operation of the facility, in accordance with the amendments would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The amendments has been evaluated against the three standards in 10 CFR 50.92(c). In its analysis of the issue of no significant hazards consideration, as required by 10 CFR 50.91(a), the licensee has provided the following:

1. Would implementation of the changes proposed in this LAR [License Amendment Request] involve a significant increase in the probability or consequences of an accident previously evaluated?

No. This LAR clarifies Technical Specification [TS] 3.9.1 regarding the applicability of boron concentration limits when the refueling canal and refueling cavity are not connected to the reactor coolant system [RCS]. When the refueling canal and the refueling cavity are isolated from the RCS, no potential path for boron dilution of the RCS exists, thus there is no significant increase in the probability of an accident that has been previously evaluated, nor would there be a significant increase in the consequences of an accident that has been previously evaluated.

2. Would implementation of the changes proposed in this LAR create the possibility of a new or different kind of accident from any accident previously evaluated?

No. The change proposed in this LAR clarifies the applicability of TS 3.9.1 when the refueling canal and refueling cavity are not connected to the reactor coolant system. When the refueling canal and the refueling cavity are isolated from the RCS, no potential path for boron dilution of the RCS exists, thus there is no means to initiate an accident that is new or different from any accident that has been previously evaluated.

3. Would implementation of the changes proposed in this LAR involve a significant reduction in a margin of safety?

No. The change proposed in this LAR only clarifies the applicability of TS 3.9.1 when the refueling canal and the refueling cavity are not connected to the reactor coolant system, [TS 3.9.1 limits the boron concentrations of the reactor coolant system], the refueling canal, and the refueling cavity to ensure that the reactor remains subcritical during Mode 6 plant conditions. However, when the refueling canal and the refueling cavity are isolated from the reactor coolant system, no potential for boron dilution of the RCS exists. Therefore, in this condition it is not necessary to place a limit on the boron concentration in the refueling canal and the refueling cavity, thus there is no significant reduction in a margin of safety since no specific boron limits are being changed.

The NRC staff has reviewed the licensee's analysis, and based on this review, has determined that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff finds that the amendment request involves no significant hazards consideration.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

#### 5.0 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 (70 FR 44401). 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.

## 6.0 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: Sean Peters

Date: September 1, 2005