

May 12, 2004

Mr. D. M. Jamil  
Vice President  
Catawba Nuclear Station  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: ISSUANCE OF  
AMENDMENTS (TAC NOS. MC0498 AND MC0499)

Dear Mr. Jamil:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 214 to Renewed Facility Operating License NPF-35 and Amendment No. 208 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 August 19, 2003, as supplemented by letters dated October 23, 2003, and January 28, 2004.

The amendments revise the requirements for the Containment Pressure Control System in TS Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation," to eliminate a problem with circuit fluctuation caused by electronic noise.

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. 50-413 and 50-414

Enclosures:

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

cc w/encls: See next page

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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. 214  
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 August 19, 2003, as supplemented by letters dated October 23, 2003, and January 28, 2004, 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. 214, 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/*

John A. Nakoski, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: May 12, 2004

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. 208  
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 August 19, 2003, as supplemented by letters dated October 23, 2003, and January 28, 2004, 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. 208, 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/*

John A. Nakoski, Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: May 12, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 214

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND LICENSE AMENDMENT NO. 208

RENEWED FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

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

Remove

3.3.2-15

B3.3.2-30

Insert

3.3.2-15

B3.3.2-30

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 214 TO RENEWED FACILITY OPERATING  
LICENSE NPF-35 AND  
AMENDMENT NO. 208 TO RENEWED FACILITY OPERATING LICENSE NPF-52  
DUKE ENERGY CORPORATION, ET AL.  
CATAWBA NUCLEAR STATION, UNITS 1 AND 2  
DOCKET NOS. 50-413 AND 50-414

## 1.0 INTRODUCTION

By letter dated August 19, 2003 (Reference 1), as supplemented by letters dated October 23, 2003, and January 28, 2004 (References 2 and 3), Duke Energy Corporation, et al. (DEC, the licensee), submitted a request for changes to the Catawba Nuclear Station, Units 1 and 2, Technical Specifications (TS). The requested changes would revise the requirements for the Containment Pressure Control System (CPCS) in TS Table 3.3.2-1, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," to eliminate a problem with circuit fluctuation caused by electronic noise.

### 1.1 TS Table 3.3.2-1, Function 9, "Containment Pressure Control System"

The licensee proposed increasing the allowable value for the start permissive from  $\leq 0.45$  psid to  $\leq 1.0$  and increasing the nominal trip setpoint from 0.4 psid to 0.9 psid. Additionally, DEC proposed increasing the nominal trip setpoint of the termination from 0.3 psid to 0.35 psid.

## 2.0 REGULATORY EVALUATION

The CPCS protects the containment building from excessive depressurization by preventing inadvertent actuation or continuous operation of the Containment Spray and Containment Air Return Systems when containment pressure is at or less than the CPCS permissive setpoint. Above the permissive setpoint, the CPCS would allow for Containment Spray System and Containment Air Return System actuation for accident mitigation.

The permissive setpoints are in the TSs because of Title 10 of *The Code of Federal Regulations* (10 CFR) Part 50.36, "Technical specifications," which sets the requirements for what information must be included in plant TSs. Paragraph (A) of 10 CFR 50.36(c)(1)(ii) requires that a limiting safety system setting be specified for a variable on which a safety limit has been placed and that the setting be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded.

Regulatory Guide (RG) 1.105, Revision 3, "Setpoints for Safety-Related Instrumentation," describes a method acceptable for complying with the Nuclear Regulatory Commission (NRC's)



regulations for ensuring that setpoints for safety-related instrumentation are initiated within and remain within the TS limits. RG 1.105, Revision 3 endorses Part 1 of Instrument Society of America (ISA) Standard ISA-S67.04-1994, "Setpoints for Nuclear Safety-Related Instrumentation."

In addition to 10 CFR 50.36, the NRC staff utilized the regulatory guidance in RG 1.105 and ISA-S67.04-1994 to perform its review on the proposed changes to the CPCS setpoints listed in TS 3.3.2.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Background of the proposed changes

The licensee stated that the containment spray system pumps have tripped on three occasions during testing when the anti-pump protective circuit (CPCS interlock) spuriously activated. Two trips occurred during auxiliary safeguards testing and one trip occurred during inservice IWP testing (pump testing per section IW of the American Society of Mechanical Engineers Code). In all cases the licensee determined that the CPCS logic circuits fluctuated and caused the respective pump motor circuitry to trip and lock out the pump run signal. The CPCS relay logic circuit was designed with a very narrow operating range, which only utilizes 0.5 percent of span, for the start/stop of the CPCS permissive. The impact of this narrow operating range is that it only takes a very small amount of electrical noise to be coupled into the circuit to result in a relay "chattering" condition.

The proposed solution to this problem is: (1) widen the deadband for the CPCS start permissive, and (2) narrow the span viewed by the CPCS pressure instrument. The range of the new pressure transmitter will be decreased from 10 psid to 2 psid. This change will increase the percentage of instrument signal span required (4 volts signal will cover 2 psid instead of 10 psid). DEC performed confirmatory testing and has determined that the proposed solution will be effective in eliminating the CPCS noise problem.

#### 3.2 Instrument Setpoints

The proposed amendment reflects instrument setpoint changes to solve the problems with circuit fluctuation. The licensee proposed CPCS start permissive Allowable Value changed from  $\leq 0.45$  psid to  $\leq 1.0$  psid, and the Nominal Trip Setpoint changed from 0.4 psid to 0.9 psid. The CPCS termination Nominal Trip Setpoint changed from 0.3 psid to 0.35 psid.

The NRC staff and the industry are currently engaged in discussions related to the methodology used to determine plant setpoints. Specifically, the NRC staff has concerns related to one of the methods, method 3, in Part II of ISA standard S67.04 that may not provide adequate margin between the safety analysis limit, or analytical limit, and the allowable value as required by 10 CFR 50.36. DEC used method 3 specified in ISA S67.04. Therefore, the NRC staff issued a Request for Additional Information to DEC in order to verify that adequate margin exists between these two values.

In response, the licensee stated that although the CPCS is included in TS Table 3.3.2-1, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," it is technically not an ESFAS system. The purpose of the CPCS is to provide a start permissive such that ESFAS

systems (Containment Spray System and Air Return System) can operate when required and to terminate their operation when not required. The CPCS is designed such that it does not affect the accuracy, margin, or response of the ESFAS when the permissive setpoint is below the ESFAS setpoint for high containment pressure. 10 CFR 50.36(c)(1)(ii)(A) defines limiting safety system settings (LSSS). However, the CPCS is not directly associated with a LSSS, since the purpose of the CPCS is to only provide an enable/disable function for ESFAS equipment.

The setpoint calculation for the CPCS is independent of the setpoint calculations for ESFAS functions. The following documents were used in the development of the setpoint calculation and revision:

- Duke Energy Engineering Directive Manual (EDM-102), Instrument Setpoint/Uncertainty Calculations, Revision 2,
- ISA Standard S67.04, Part I, Setpoints for Nuclear Safety-Related Instrumentation, 1994, and
- ISA-RP67.04, Part II, Methodologies for the Determination of Setpoints for Nuclear Safety Related Instrumentation, 1994.

Based on the CPCS setpoint calculation, the licensee concludes that the revised start permissive and termination setpoints and the revised start permissive allowable value will not adversely impact the containment spray system and the air return system. The NRC staff has reviewed the submittal and agrees with DEC's conclusion. The CPCS is not directly associated with an LSSS, and therefore, the staff considers that the licensee continues to meet 10 CFR 50.36(c)(1)(ii)(A) for this license amendment application.

### 3.3 Effects on Catawba Containment Safety Analyses

By letter dated December 15, 2003 (Reference 4), the NRC staff asked the licensee to verify whether this license amendment request has any effects on the Catawba containment safety analyses. The licensee's January 28, 2004, letter discussed the relationship between this proposed TS change and the Catawba containment safety analyses. DEC stated that the CPCS is not modeled in any Catawba safety analyses. The CPCS performs only an enable/disable function for the containment spray system and the air return system. The containment spray system and the air return system, on the other hand, are modeled in the Catawba safety analyses. Their start and termination setpoints are different from, and bound, the proposed CPCS setpoints. Therefore, changing the CPCS Start Permissive Allowable Value from  $\leq 0.45$  psid to  $\leq 1.0$  psid, and the Nominal Trip Setpoint from 0.4 psid to 0.9 psid will have no effect on the Catawba containment safety analyses. Furthermore, changing the CPCS Termination Nominal Trip Setpoint from 0.3 psid to 0.35 psid will also have no effect on the Catawba safety analyses.

Based on the review of the Catawba license amendment submittals, including the CPCS instrument setpoint calculations, the NRC staff finds that the proposed TS changes on the CPCS permissive setpoints and allowable value will not adversely impact the containment spray system and the air return system. Additionally, the proposed changes will have no effect on the Catawba containment safety analyses. The Catawba setpoint for this amendment request is in conformance with RG 1.105 and 10 CFR 50.36, and therefore, the proposed TS changes are acceptable.

#### 4.0 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.

#### 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 (68 FR 54749). 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.

#### 7.0 REFERENCES

1. Letter from Dhiaa M. Jamil, Vice President, Duke Power to USNRC, "Duke Energy Corporation Catawba Nuclear Station, Units 1 and 2 Docket Numbers 50-413 and 50-414 Proposed Technical Specifications Amendments 3.3.2, Engineered Safety Feature Actuation System Instrumentation," August 19, 2003 (ML032471521).
2. Letter from Dhiaa M. Jamil, Vice President, Duke Power to USNRC, "Duke Energy Corporation Catawba Nuclear Station, Units 1 and 2 Docket Numbers 50-413 and 50-414 Proposed Technical Specifications Amendments 3.3.2, Engineered Safety Feature Actuation System Instrumentation," October 23, 2003 (ML033090085).
3. Letter from Dhiaa M. Jamil, Vice President, Duke Power to USNRC, "Duke Energy Corporation Catawba Nuclear Station, Units 1 and 2 Docket Numbers 50-413 and 50-414 Proposed Technical Specifications Amendments 3.3.2, Engineered Safety Feature Actuation System Instrumentation TAC Nos. MC0498 and MC0499," January 28, 2003 (ML040370657).
4. Letter from Sean E. Peters, USNRC to Dhiaa M. Jamil, Duke Power, "Catawba Nuclear Station, Units 1 and 2 RE: Request for additional Information (TAC Nos. MC0498 and MC0499)," December 15, 2003 (ML033490002).

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Date: May 12, 2004

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