

March 20, 2002

Mr. G. R. Peterson  
Site Vice President  
Catawba Nuclear Station  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: ISSUANCE OF  
AMENDMENTS (TAC NOS. MB2730 AND MB2731)

Dear Mr. Peterson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 196 to Facility Operating License NPF-35 and Amendment No. 189 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 August 6, 2001.

The amendments revise TS 3.3.2 for Engineered Safety Feature Actuation System Instrumentation, and TS 3.3.6 for Containment Purge and Exhaust Isolation Instrumentation. The amendments exclude the Containment Purge Ventilation System and the Hydrogen Purge System containment isolation valves from the instrumentation testing requirements in TS 3.3.2 and TS 3.3.6. The amendments also make appropriate changes in the Bases for TS 3.3.6 and TS 3.6.3.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

*/RA/*

Chandu P. Patel, 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. 196 to NPF-35
2. Amendment No. 189 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 FACILITY OPERATING LICENSE

Amendment No. 196  
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 Energy Corporation, acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. (licensees), dated August 6, 2001, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 196 , 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/*

Richard J. Laufer, Acting Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: March 20, 2002

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 FACILITY OPERATING LICENSE

Amendment No. 189  
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 Energy Corporation, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated August 6, 2001, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 189 , 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/*

Richard J. Laufer, Acting Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: March 20, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 196

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND LICENSE AMENDMENT NO. 189

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 number and contain marginal lines indicating the areas of change.

Remove

Insert

3.3.2-11

3.3.2-11

3.3.6-1

3.3.6-1

3.3.6-2

3.3.6-2

3.3.6-3

3.3.6-3

B 3.3.6-1

B 3.3.6-1

B 3.3.6-2

B 3.3.6-2

B 3.3.6-3

B 3.3.6-3

B 3.3.6-4

B 3.3.6-4

B 3.3.6-5

B 3.3.6-5

B 3.6.3-1

B 3.6.3-1

B 3.6.3-2

B 3.6.3-2

B 3.6.3-3

B 3.6.3-3

B 3.6.3-4

B 3.6.3-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 196 TO FACILITY OPERATING LICENSE NPF-35  
AND AMENDMENT NO. 189 TO 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 6, 2001, 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 request would change TS 3.3.2 for Engineered Safety Feature Actuation System (ESFAS) Instrumentation, and TS 3.3.6 for Containment Purge and Exhaust Isolation Instrumentation. The request would also change the Bases for TS 3.3.6 and TS 3.6.3 for Containment Isolation Valves. The proposed amendments would exclude the Containment Purge Ventilation System and the Hydrogen Purge System containment isolation valves from the instrumentation testing requirements in TS 3.3.6. The TS 3.3.6 requirements would still apply to the Containment Air Release and Addition System. At Catawba, the containment isolation valves for the Containment Purge Ventilation System and the Hydrogen Purge System are sealed closed in the TS 3.3.6 modes of applicability (Modes 1, 2, 3, and 4) based on the TS 3.6.3 surveillance requirements. Therefore the licensee has concluded that there is no basis for a TS requirement for these valves to maintain their automatic containment isolation function.

## 2.0 BACKGROUND

The proposed changes affect (a) the Containment Purge Ventilation System (which consists of the Containment Purge Supply and Exhaust Systems and the Incore Instrumentation Room Purge Supply and Exhaust Systems), (b) the Hydrogen (Sample and) Purge System and (c) the Containment Air Release and Addition System.

### A. Containment Purge Ventilation System

The purpose of the Containment Purge Ventilation System is to reduce the airborne radioactivity levels in containment by purging the upper containment, lower containment, and the incore instrumentation room atmosphere to the unit vent during refueling when periods of personnel access are required. The Containment Purge Ventilation System consists of four sub-systems: the Containment Purge Supply System, the Containment Purge Exhaust System, the Incore Instrumentation Room Purge Supply System, and the Incore Instrumentation Room Purge Exhaust System. The Containment Purge Ventilation System does not provide any normal ventilation function and operates only during Modes 5, 6, and No Mode.



The Containment Purge Ventilation System for each unit contains nine containment penetrations. Each penetration contains two redundant pneumatic-operated butterfly containment isolation valves. During normal plant operation, each Containment Purge Ventilation System containment isolation valve is administratively locked closed and also verified to be in its closed position once every 31 days per Surveillance Requirement (SR) 3.6.3.1. This surveillance ensures that containment integrity will be maintained prior to and during any design basis accident. 10 CFR Part 50, Appendix J, Type C leak rate testing is periodically performed to ensure overall containment leakage is within the limits of TS 3.6.1 during Modes 1, 2, 3, and 4 (SR 3.6.3.6). Below Mode 4, the valves are only opened as allowed by TS 3.9.3.

TS 3.6.3 requires that the Containment Purge Ventilation System containment isolation valves are closed in Modes 1, 2, 3, and 4. This ensures that the potential radiological release paths to the environment through these containment isolation valves are minimized. The Containment Purge Ventilation System containment isolation valves are assumed to be open during a postulated fuel handling accident within the containment (Reference UFSAR Section 15.7.4) and no credit is taken for their closure during the accident. However, the radiological consequences of a postulated fuel handling accident are reduced because the release path includes a non-ESF filter train tested in accordance with Regulatory Guide 1.52. Therefore the licensee has concluded that the TS 3.3.6 requirement for containment isolation instrumentation testing is unnecessary to verify operability of the Containment Purge Ventilation System containment isolation valves during any mode of plant operation.

## B. Hydrogen Purge System

The Hydrogen Purge System may be used after a loss-of-coolant accident to purge hydrogen from containment into the annulus, as part of the containment combustible gas control system. This system provides an alternate method to the Hydrogen Mitigation, Skimmer, and Recombiner Systems for controlling hydrogen concentration in containment. The hydrogen recombiners meet the single failure criterion. The Hydrogen Purge System is designed to be manually initiated before the hydrogen concentration reaches 4 volume percent and has sufficient capacity such that the hydrogen concentration will not exceed 4 volume percent. In addition, during a containment leak rate or structural integrity test, the Hydrogen Purge System can be used for relief protection to prevent the containment from being overpressurized during the test. The Hydrogen Purge System is not used during normal plant operation.

The Hydrogen Purge System for each Catawba unit contains two containment penetrations. Each penetration contains two redundant containment isolation valves. Three of these valves are motor-operated gate valves with soft seats and one is a passive check valve. During normal plant operation, the motor-operated gate valves are administratively locked closed by deenergizing their actuators. The passive check valve located inside the containment maintains a closed position since the blower is not placed in operation. Each Hydrogen Purge System containment isolation valve is also verified to be in its closed position once every 31 days per SR 3.6.3.1. This surveillance ensures that containment integrity will be maintained and the potential radiological release paths to the environment through these containment isolation valves are minimized prior to and during any design basis accident. 10 CFR Part 50, Appendix J, Type C leak rate testing is periodically performed to ensure overall containment leakage is within the limits of TS 3.6.1 during Modes 1, 2, 3, and 4 (SR 3.6.3.6).

The Hydrogen Purge System containment isolation valves are only opened below Mode 4, as allowed by TS 3.9.3. Based on these considerations, the licensee has concluded that the TS 3.3.6 requirement for containment isolation instrumentation testing is unnecessary to verify operability of the Hydrogen Purge System containment isolation valves during any mode of plant operation.

#### C. Containment Air Release and Addition System

The purpose of the Containment Air Release and Addition System is to maintain containment pressure between the TS low and high limits during normal plant operation. An increase in pressure during normal operation is controlled by the containment air release fans exhausting from the containment through the containment air release filters. If a slight vacuum develops inside containment, the system is used to supply air into containment. Due to the pressure differential, air is drawn into containment from the auxiliary building by natural flow.

The Containment Air Release and Addition System is operable during normal plant operation. The TS 3.3.6 specification to require the performance of surveillance testing to demonstrate the Containment Air Release and Addition System containment isolation valves will close in Modes 1 through 4 in response to containment isolation signals is still applicable.

#### D. Description of Proposed Changes

- In TS 3.3.2, ESFAS Instrumentation, the following footnote is added in Table 3.3.2-1, for Function 1 (Safety Injection) and Function 3 (Containment Isolation):  
  
"The requirements of this Function are not applicable to Containment Purge Ventilation System and Hydrogen Purge System components, since the system containment isolation valves are sealed closed in MODES 1, 2, 3, and 4."
- In TS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation, the nomenclature is changed from "Containment Purge and Exhaust" system to "Containment Air Release and Addition" system as applicable. Thus TS 3.3.6 will only be applicable to Containment Air Release and Addition System Isolation Instrumentation.
- Table 3.3.6-1 header is changed from "REQUIRED CHANNELS" to "REQUIRED TRAINS." Also, deletes "trains" in Function 2 of the table.
- The TS 3.3.6 Bases is changed to reflect the changes made in TS 3.3.6 above.
- The TS 3.6.3 Bases is changed to provide clarifications and to make its nomenclature consistent with above changes in TS 3.3.6.

### 3.0 EVALUATION

The design basis function of the Containment Purge Ventilation System and Hydrogen Purge System containment isolation valves is to maintain containment integrity and limit radiological doses during a design basis accident such as a large break loss-of-coolant accident. The containment penetrations with their associated piping and valves are nuclear safety related. Since these containment isolation valves are sealed or locked closed during Modes 1, 2, 3, and

4, they are in their design basis engineered safety feature closed positions during normal plant operation and prior to initiation of any design basis accident. Each Containment Purge Ventilation System and Hydrogen Purge System containment isolation valve is also verified to be in its closed position once every 31 days per SR 3.6.3.1. 10 CFR Part 50, Appendix J, Type C leak rate testing is periodically performed to ensure overall containment leakage is within the limits of TS 3.6.1 during Modes 1, 2, 3, and 4 (SR 3.6.3.6). These surveillances ensure that containment integrity will be maintained prior to and during any design basis accident.

The proposed amendments exclude the Containment Purge Ventilation System and the Hydrogen Purge System containment isolation valves from the TS 3.3.6 requirements. The staff has determined that the surveillance requirements in TS 3.6.3 provide reasonable assurance that the design basis function of the Containment Purge Ventilation System and Hydrogen Purge System containment isolation valves will be satisfied during operation in Modes 1, 2, 3 and 4. The additional surveillance requirements of the instrumentation for these isolation valves in TS 3.3.6 and TS 3.3.2 are not necessary because these valves are maintained closed in Modes 1, 2, 3, and 4. Below Mode 4 the subject isolation valves may be opened as allowed by TS 3.9.3. However, TS 3.9.3 requires that each penetration providing direct access from the containment atmosphere to the outside atmosphere that is not closed must be exhausting through an operable high-efficiency particulate air filter and charcoal adsorber. The filter train required by TS 3.9.3 is tested in accordance with Regulatory Guide 1.52. The analysis performed by the licensee for the fuel handling accident inside the containment, demonstrates that Catawba, Units 1 and 2 will continue to meet the requirements of 10 CFR Part 100 and the General Design Criterion 61. Based on the above determinations, the proposed technical specification modifications 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 and change surveillance requirements. 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 (66 FR 64291). 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: E. Throm  
C. Patel

Date: March 20, 2002

Catawba Nuclear Station

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