July 26, 2007

Mr. G. R. Peterson
Vice President
McGuire Nuclear Station
Duke Power Company LLC
12700 Hagers Ferry Road
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING CONTAINMENT ISOLATION VALVES (TAC NOS. MD3328 AND MD3329)

Dear Mr. Peterson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 243 to Renewed Facility Operating License NPF-9 and Amendment No. 224 to Renewed Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated July 31, 2006, as supplemented May 24, 2007.

The amendments revise TS 3.6.3, "Containment Isolation Valves," by removing the allowance to open the upper containment purge isolation valves in the applicable modes of operation when containment integrity is required by the TSs. In addition, the amendments delete TS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation." The change makes the TS requirements consistent for both the upper and lower containment purge isolation valves.

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/

John Stang, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-369 and 50-370

Enclosures:
1. Amendment No. 243 to NPF-9
2. Amendment No. 224 to NPF-17
3. Safety Evaluation

cc w/encls: See next page

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Amendment No.: ML071830541
Tech Spec No.: ML072080462

*By Memorandum dated June 28, 2007

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/SCVB/BC	OGC	NRR/LPLC/BC
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DUKE POWER COMPANY LLC

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 243
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 Power Company LLC (licensee), dated July 31, 2006, as supplemented May 24, 2007, 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. 243, 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
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-9
and the Technical Specifications

Date of Issuance: July 26, 2007

DUKE POWER COMPAPNY LLC

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 224
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), Renewed Facility Operating License No. NPF-17, filed by the Duke Power Company LLC (the licensee), dated July 31, 2006, as supplemented May 24, 2007, 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. 224, 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
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-17
and the Technical Specifications

Date of Issuance: July 26, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 243

RENEWED FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

LICENSE AMENDMENT NO. 224

RENEWED FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NO. 50-370

Replace the following pages of the Renewed Facility Operating Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
License Pages	License Pages
NPF-9 page 3	NPF-9 page 3
NPF-17 page 3	NPF-17 page 3
TS Pages	TS Pages
i	i
3.6.3-1	3.6.3-1
3.6.3-5	3.6.3-5
3.6.3-6	3.6.3-6

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 243 TO RENEWED FACILITY OPERATING LICENSE NPF-9

AND

AMENDMENT NO. 224 TO RENEWED FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY LLC

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By application dated July 31, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML062200466), as supplemented by letter dated May 24, 2007 (ADAMS Accession No. ML071500066), Duke Power Company LLC (Duke, the licensee), requested changes to the Technical Specifications (TSs) for the McGuire Nuclear Station, Units 1 and 2 (Mcguire 1/2). The supplement dated May 24, 2007, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published the *Federal Register* on December 5, 2006 (71 FR 70558).

The proposed changes would revise TS 3.6.3, "Containment Isolation Valves," by removing the allowance to open the upper containment purge isolation valves in the applicable modes of operation when containment integrity is required by the TSs. In addition, the amendments will delete TS 3.3.6, "Containment Purge and Exhaust Isolation Instrumentation." The change makes the TS requirements consistent for both the upper and lower containment purge isolation valves. A similar amendment was requested by the licensee and was reviewed and approved by the NRC staff for the Catawba Nuclear Station Units, 1 and 2 on March 20, 2002 (ADAMS Accession No. ML020800871).

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance which the NRC staff considered in its review of the application include:

- Title 10 of the *Code of Federal Regulations* (CFR) Part 50.36, "Technical Specifications"

- 10 CFR Part 50, Appendix A, "General Design Criterion [GDC] for Nuclear Power Plants": GDC 56, "Primary containment isolation"

- Regulatory Guide 1.141, “Containment Isolation Provisions for Fluid Systems”
- Regulatory Guide 1.163, “Performance Based Containment Leak-Test Program”
- NUREG-0800, “Standard Review Plan,” Section 6.2.4, “Containment Isolation System”
- [American National Standards Institute] ANSI N271-1976, “Containment Isolation Provisions for Fluid Systems
- [Nuclear Energy Institute] NEI 94-01, Rev 0, 'Industry Guideline for Implementing Performance Based Option of 10 CFR 50, Appendix J"
- [American National Standards Institute/American Nuclear Society] ANSI/ANS 56.8/1994, “Containment System Leakage Testing Requirements”

General Design Criterion (GDC) 56, requires that each line that connects directly to the containment atmosphere and penetrates the primary reactor containment must meet specified criteria for the use and positioning of isolation valves. The upper containment purge isolation valves are containment isolation valves and form a part of the containment boundary. The containment isolation valves’ safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary following a design-basis accident.

3.0 TECHNICAL EVALUATION

3.1 TS 3.6.3, “Containment Isolation Valves”

The licensee proposes to revise TS 3.6.3 by removing the allowance to open the upper containment purge isolation valves in MODES 1, 2, 3, and 4. This will make the TS consistent for both the upper containment purge isolation valves and the lower containment purge isolation valves.

The containment purge system supplies outside air into containment for ventilation and cooling or heating. The system may also be used to reduce the concentration of airborne radioactivity within containment. There are five purge air supply and four purge air exhaust penetrations through containment. Two normally closed isolation valves at each penetration provide containment isolation.

Several years ago the containment purge isolation valves at McGuire 1/2 were determined to be unreliable in maintaining leak tightness following valve cycling. In 1994, the licensee performed modifications to upgrade the valve seats on the containment purge supply and exhaust valves with a softer ethylene propylene (EPDM) material. The new softer seats allow the valve disc to move further into the valve seat for improved sealing capability. As part of the modification evaluation, the EPDM material was evaluated for use in the maximum post-accident radiation and temperature environmental conditions and was found to be acceptable. The material used in the new valve seat design is not much different from the original design except for material hardness.

Subsequent to this design change the licensee submitted a license amendment on

December 7, 2001 (ADAMS Accession No. ML020230354), requesting to remove the containment purge supply and exhaust valves from quarterly leak rate testing. This request was predicated on the condition of administratively maintaining these valves sealed closed during MODES 1 to 4 with power removed. The NRC staff approved the amendment September 4, 2002 (ADAMS Accession No. ML022540102).

The current TSs allow the upper compartment purge and supply isolation valves to be opened under administrative controls during MODES 1, 2, 3, and 4. These valves currently can be opened (i.e., removed from their locked-closed sealed position) under administrative control for the purposes of containment pressure control, for air quality considerations for personnel entry, or for surveillances that require the valves to be opened.

The licensee proposes to change TS 3.6.3 by removing the administrative option of opening the upper compartment purge and supply isolation valves during MODES 1, 2, 3, and 4. This is consistent with current plant operation. The changes to the TS will no longer allow the licensee the option to open the upper compartment purge and supply isolation valves during MODES 1, 2, 3, and 4. The licensee has changed the function of the valves from automatic isolation valves to sealed-closed isolation valves in accordance with ANSI N271-1976, “Containment Isolation Provisions for Fluid Systems.” The re-classification of all the purge system containment isolation valves from automatic to sealed closed maintains the valves in their design basis position prior to initiation of any design basis accident. The provision to allow purging containment in MODES 1 through 4 will no longer be allowed.

The design-basis function of the containment purge isolation valves is to maintain containment integrity and limit radiological doses during a design-basis accident. The change to the TSs now requires the upper containment purge isolation valves to be sealed closed during operational MODES 1, 2, 3, and 4. The change to the TSs will ensure the valves are in their design-basis closed positions during all normal plant operation and prior to initiation of any design-basis accident. This ensures that the potential radiological release paths to the environment through these containment isolation valves are minimized.

Appendix J Type C leak rate testing of 10 CFR Part 50 is periodically performed to ensure overall containment leakage is within the limits of TS 3.6.1 during MODES 1, 2, 3, and 4. Each containment purge system containment isolation valve is also verified to be in its closed position once every 31 days in accordance with TS surveillance requirement 3.6.3.1. These surveillances ensure that containment integrity will be maintained prior to and during any design-basis accident.

Based on the above, the NRC staff finds changing TS 3.6.3 to require the upper containment purge isolation valves remain sealed closed in operational MODES 1, 2, 3 and 4 acceptable.

3.2 Technical Specification 3.3.6, “Containment Purge and Exhaust Isolation Instrumentation”

This specification requires the performance of surveillance testing to demonstrate the containment purge valves will close in MODES 1, 2, 3, and 4 in response to containment isolation signals. The licensee proposes to delete TS 3.3.6 in its entirety.

The McGuire 1/2 Updated Final Safety Analysis Report assumes that the containment purge

isolation valves are closed at the initiation of a design-basis accident to minimize releases of radioactivity. To assure this, these valves receive an automatic safety injection (SI) signal which will close the purge valves if containment purging was in progress in MODES 1 through 4. The isolation instrumentation that performs this function is governed by TS 3.3.6 and satisfies Criterion 3 of 10 CFR 50.36.

Criterion 3 of 10 CFR 50.36(c)(2) reads:

> (ii) A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:
>
> (C) Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The proposed revision to TS 3.6.3 described above will maintain the containment purge valves in the sealed closed position in MODES 1, 2, 3, and 4. These power-operated containment isolation valves are no longer considered to be automatic isolation valves as defined in ANSI N271-1976, "Containment Isolation Provisions for Fluid Systems." The power has been removed to all the upper containment purge isolation valves. Therefore, the current configuration of the valves satisfies the definition of a sealed-closed isolation valve as defined in ANSI N271-1976. Regulatory Guide 1.141 endorses this ANSI standard.

The upper containment purge isolation valves have been re-classified from automatic to sealed-closed valves. This maintains all the valves in their design-basis position prior to initiation of any design-basis accident. The purge valves are leak rate tested once they are placed in the sealed closed position then verified sealed closed every 31 days. Based on the above, the NRC staff concludes that there is no basis for a TS requirement per 10 CFR 50.36(c)(2)(ii)(C) Criterion 3 to test the automatic containment isolation function of the upper containment purge isolation valves. Therefore, the NRC staff finds acceptable the deletion of TS 3.3.6 in its entirety.

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 a requirement with respect to the installation or use of facility components 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 (71 FR 70558). 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: D. Nold

Date: July 26, 2007