

September 4, 2002

Mr. H. B. Barron
Vice President, McGuire Site
Duke Energy Corporation
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 RE: ISSUANCE OF
AMENDMENTS REGARDING OPTION B OF APPENDIX J FOR LOCAL
LEAKAGE RATE TESTING (TAC NOS. MB3565 AND MB3566)

Dear Mr. Barron:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 207 to Facility Operating License NPF-9 and Amendment No. 188 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated December 7, 2001, as supplemented by letter dated July 22, 2002.

The amendments revise the TS to permit implementation of containment local leakage rate testing addressed by Title 10 of the *Code of Federal Regulations*, Part 50, Appendix J, Option B, and to reference Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which specifies a method acceptable to the NRC for complying with Option B. In addition, the TS are revised regarding soap bubble testing and leak testing of containment purge valves with resilient seals for upper and lower compartments and instrument rooms.

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/

Robert E. Martin, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-369 and 50-370

Enclosures:

1. Amendment No. 207 to NPF-9
2. Amendment No. 188 to NPF-17
3. Safety Evaluation

cc w/encl: See next page

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Package: ML022540005

Amendment: ML022540102

TS Pages: ML022520144 *See previous concurrence

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NAME	RMartin	CHawes	CBray	JNakoski
DATE	9/3/02	9/3/02	08/28/02	9/3/02

DUKE ENERGY CORPORATION

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 207
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), Facility Operating License No. NPF-9 filed by the Duke Energy Corporation (licensee) dated December 7, 2001, as supplemented by letter dated July 22, 2002, 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-9 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 207, 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/

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: September 4, 2002

DUKE ENERGY CORPORATION

DOCKET NO. 50-370

McGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 188
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 December 7, 2001, as supplemented by letter dated July 22, 2002, 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-17 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 188, 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/

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: September 4, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 207

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

ATTACHMENT TO LICENSE AMENDMENT NO. 188

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 number and contain marginal lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
3.6.1-1	3.6.1-1
3.6.1-2	3.6.1-2
3.6.2-5	3.6.2-5
3.6.3-6	3.6.3-6
3.6.3-7	3.6.3-7
5.5-1	5.5-1
5.5-2	5.5-2
B 3.0-10	B 3.0-10
B 3.6.1-1	B 3.6.1-1
B.3.6.1-2	B 3.6.1-2
B 3.6.1-3	B 3.6.1-3
B 3.6.1-4	B 3.6.1-4
B 3.6.1-5	B 3.6.1-5
B 3.6.2-2	B 3.6.2-2
B 3.6.2-6	B 3.6.2-6
B 3.6.2-7	B 3.6.2-7
B 3.6.3-12	B 3.6.3-12
B 3.6.3-13	B 3.6.3-13

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 207 TO FACILITY OPERATING LICENSE NPF-9
AND AMENDMENT NO. 188 TO FACILITY OPERATING LICENSE NPF-17
REVISION TO TECHNICAL SPECIFICATIONS REGARDING
OPTION B OF APPENDIX J FOR LOCAL LEAK RATE TESTING FOR
DUKE ENERGY CORPORATION
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter dated December 7, 2001, as supplemented by letter dated July 22, 2002, Duke Energy Corporation, et al. (the licensee), submitted a request for changes to the McGuire Nuclear Station, Units 1 and 2 (McGuire), Technical Specifications (TS). The proposed TS changes would permit implementation of containment leakage testing in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix J, Option B, (Option B), and would reference Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which specifies a method acceptable to the NRC for complying with Option B. These changes relate only to Type B and C (local) leakage rate testing. The use of Option B for Type A (integrated) leakage rate testing was approved on March 21, 1997, by License Amendment Nos. 173 and 155. In addition, the licensee requested two changes pertaining to soap bubble testing and leak testing of the containment purge lower and upper compartment and instrument room valves with resilient seals. The licensee also made associated changes to the Bases for the TS. The supplement dated July 22, 2002, provided clarifying information that did not change the scope of the December 7, 2001, application nor the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

Compliance with 10 CFR Part 50, Appendix J, provides assurance that the primary containment, including those systems and components that penetrate the primary containment, shall not exceed allowable leakage rate values as specified in the TS and Bases. The allowable leakage rate is determined so that the leakage rate assumed in the safety analyses is not exceeded.

On February 4, 1992, the NRC published a notice in the *Federal Register* (57 FR 4166) discussing a planned initiative to begin eliminating requirements marginal to safety that impose a significant regulatory burden. 10 CFR Part 50, Appendix J, "Primary Containment Leakage

Testing for Water-Cooled Power Reactors," was considered for this initiative and the staff undertook a study of possible changes to this regulation. The study examined the previous performance history of domestic containments and examined the effect on risk of a revision to the requirements of Appendix J. The results of this study are reported in NUREG-1493, "Performance-Based Leak-Test Program."

Based on the results of this study, the staff developed a performance-based approach to containment leak rate testing. On September 12, 1995, the NRC approved issuance of this revision to 10 CFR Part 50, Appendix J. The revision was subsequently published in the *Federal Register* on September 26, 1995, and became effective on October 26, 1995. The revision added Option B, "Performance-Based Requirements," to Appendix J to allow licensees to voluntarily replace the prescriptive testing requirements of Appendix J with testing requirements based on both overall and individual component leakage rate performance.

Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, was developed as a method acceptable to the NRC staff for implementing Option B. This regulatory guide states that the Nuclear Energy Institute (NEI) guidance document NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," provides methods acceptable to the NRC staff for complying with Option B, with four exceptions which are described therein.

Option B requires that Regulatory Guide 1.163, or another implementation document used by a licensee to develop a performance-based leakage testing program, must be included by general reference in the plant TS. The licensee has referenced Regulatory Guide 1.163 in the proposed changes to TS 5.5.2, "Containment Leakage Rate Testing Program."

Regulatory Guide 1.163 specifies an extension in Type A test frequency to at least one test in 10 years based upon two consecutive successful tests. Type B tests may be extended up to a maximum interval of 10 years based upon completion of two consecutive successful tests and Type C tests may be extended up to 5 years based on two consecutive successful tests.

By letter dated October 20, 1995, NEI proposed TS to implement Option B. After some discussion, the staff and NEI agreed on final TS. The staff transmitted the TS to NEI in a letter dated November 2, 1995. These TS were incorporated into Standard TS and served as a model for licensees to develop plant-specific TS in preparing license amendment requests to implement Option B. However, the Standard TS were revised in accordance with the Technical Specification Task Force (TSTF) generic change traveler TSTF-52, Revision 3, which is currently used as the standard for TS related to Option B.

In order for a licensee to determine the performance of each component, factors that are indicative of or affect performance, such as an administrative leakage limit, must be established. The administrative limit is selected to be indicative of the potential onset of component degradation. Although these limits are subject to NRC inspection to assure that they are selected in a reasonable manner, they are not TS requirements. Failure to meet an administrative limit requires the licensee to return to the minimum value of the test interval.

Option B requires that the licensee maintain records to show that the criteria for Type A, B, and C tests have been met. In addition, the licensee must maintain comparisons of the

performance of the overall containment system and the individual components to show that the test intervals are adequate. These records are subject to NRC inspection.

3.0 EVALUATION

In amendments to the McGuire Unit 1 and 2 TS, numbered 173 and 155, respectively, dated March 21, 1997, the TS were revised to incorporate the requirements of 10 CFR Part 50, Appendix J, Option B, for the integrated Type A test. The Type B and C local leakage tests continued, at that time, to be performed under the requirements of Option A. In amendments to the McGuire Unit 1 and 2 TS, numbered 184 and 166, respectively, dated September 30, 1998, the TS were revised in response to the improved TS based on TSTF-52, "Westinghouse Improved Standard TS and Bases," Revision 3. The improved TS reflected the current requirements for containment leakage rate testing, i.e., Type A tests performed per Option B and Type B and C tests performed per Option A.

In a letter dated December 7, 2001, and a supplement dated July 22, 2002, the licensee proposed to perform the Type B and C tests in accordance with the requirements of Option B of Appendix J. The licensee has proposed appropriate changes to the McGuire TS to reflect this. The proposed changes revise SR 3.6.1, SR 3.6.2.1, SR 3.6.3.6 and SR 3.6.3.8 such that all Type A, B, and C testing shall be performed in accordance with Option B. The details of the testing are relocated to the Containment Leakage Rate Testing Program in TS 5.5.2 to reflect that all containment leakage rate testing is to be done in accordance with Appendix J, Option B.

The TS changes proposed by the licensee are in compliance with the requirements of Option B and are consistent with the guidance of Regulatory Guide 1.163. The proposed TS are also consistent with TSTF-52, Revision 3.

3.1 Soap Bubble Testing, SR 3.6.3.8

The licensee has proposed a change that affects SR 3.6.3.8, but is unrelated to the adoption of 10 CFR Part 50, Appendix J, Option B. This change deletes the surveillance note requiring soap bubble testing for penetrations that are not testable individually. The requirement for soap bubble testing at McGuire applies to penetrations surrounded by guard piping or penetrations that are welded to the containment liner. For most configurations, the outside containment end of the guard pipe is seal welded to the process pipe.

The basis for performing soap bubble testing of penetration welds was presented previously in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, LWR Edition," and Branch Technical Position CSB 6-3, "Determination of Bypass Leakage Paths in Dual Containment Plants," Revision 2. The position in these documents is no longer held by the staff. The staff's current position is that: (a) requiring soap bubble testing of welded penetrations is equivalent to requiring soap bubble testing on all welded seams of a steel containment or a containment liner, (b) that this form of leakage would be detected by the Type A test and that, (c) requiring soap bubble testing at welded penetrations places an unnecessary burden on the licensee.

Based on the staff's current position, the staff concludes that the elimination of the requirement for soap bubble testing of penetration welds is acceptable.

3.2 Containment Purge Lower And Upper Compartment And Instrument Room Valves With Resilient Seals, SR 3.6.3.6

The licensee proposed to revise SR 3.6.3.6 to replace the specified frequency for leak testing containment purge lower and upper compartment and instrument room valves with resilient seals with a requirement to test these valves in accordance with the Containment Leak Rate Testing Program. Currently, SR 3.6.3.6 requires leak testing every 184 days and within 92 days after opening the valve. Regulatory Guide 1.163 limits the testing frequency of these valves to no more than 30 months as specified in ANSI/ANS 56.8/1994.

In the July 22, 2002, letter, the licensee provided leakage testing data for the last 10 years and a short discussion of recent testing and design improvements. Additionally, the licensee states that these valves are maintained closed during modes 1 to 4 with power removed and that no benefits are realized from on-line testing. In the proposed bases, the licensee states that these valves will not be placed on the maximum extended test interval, but tested on the nominal test interval in accordance with the Containment Leakage Rate Testing Program.

Based on the review of the testing data, design improvements, frequency of operation, and modes for allowed operation, the staff finds that testing these valves in accordance with Regulatory Guide 1.163 is acceptable.

4.0 CONCLUSION

The staff has reviewed the changes to the TS and associated Bases proposed by the licensee, for Option B implementation, and finds that they are in compliance with the requirements of Appendix J, Option B, and are consistent with the guidance of Regulatory Guide 1.163. Further, the staff finds the changes discussed in Sections 3.1 and 3.2 above, to be acceptable on the bases discussed therein. Therefore, the staff finds the proposed TS changes to be acceptable.

5.0 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.

6.0 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 changes 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 66464). 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.

7.0 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. Jackson, SPLB/DSSA

Date: September 4, 2002

McGuire Nuclear Station

cc:

Ms. Lisa F. Vaughn
Legal Department (PBO5E)
Duke Energy Corporation
422 South Church Street
Charlotte, North Carolina 28201-1006

County Manager of
Mecklenburg County
720 East Fourth Street
Charlotte, North Carolina 28202

Michael T. Cash
Regulatory Compliance Manager
Duke Energy Corporation
McGuire Nuclear Site
12700 Hagers Ferry Road
Huntersville, North Carolina 28078

Anne Cottingham, Esquire
Winston and Strawn
1400 L Street, NW.
Washington, DC 20005

Senior Resident Inspector
c/o U.S. Nuclear Regulatory Commission
12700 Hagers Ferry Road
Huntersville, North Carolina 28078

Dr. John M. Barry
Mecklenburg County
Department of Environmental
Protection
700 N. Tryon Street
Charlotte, North Carolina 28202

Mr. Peter R. Harden, IV
VP-Customer Relations and Sales
Westinhouse Electric Company
6000 Fairview Road
12th Floor
Charlotte, North Carolina 28210

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

Mr. C. Jeffrey Thomas
Manager - Nuclear Regulatory
Licensing
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28201-1006

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

Mr. Richard M. Fry, Director
Division of Radiation Protection
North Carolina Department of
Environment, Health and Natural
Resources
3825 Barrett Drive
Raleigh, North Carolina 27609-7721

Mr. T. Richard Puryear
Owners Group (NCEMC)
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745