



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

September 8, 2017

Mr. Steven D. Capps
Vice President
McGuire Nuclear Station
Duke Energy Carolinas, LLC
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

**SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 – ISSUANCE OF
AMENDMENTS ADOPTING TECHNICAL SPECIFICATIONS TASK FORCE
TRAVELER TSTF 142-A, REVISION 0 (CAC NOS. MF9121 AND MF9122)**

Dear Mr. Capps:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 297 to Renewed Facility Operating License No. NPF-9 and Amendment No. 276 to Renewed Facility Operating License No. NPF-17 for the McGuire Nuclear Station, Units 1 and 2, respectively. The amendments are in response to your application dated January 11, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17025A069).

The amendments modified Technical Specification 3.1.2, "Core Reactivity," to revise the Completion Times of Required Action A.1 and A.2 from 72 hours to 7 days. The proposed changes are consistent with NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-142-A, Revision 0, "Increase the Completion Time when the Core Reactivity Balance is Not Within Limit."

S. Capps

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Mahoney', with a long horizontal flourish extending to the right.

Michael Mahoney, 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. 297 to NPF-9
2. Amendment No. 276 to NPF-17
3. Safety Evaluation

cc w/enclosures: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 297
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 Duke Energy Carolinas, LLC (the licensee), dated January 11, 2017, 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.

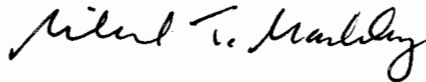
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-9 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 297, are hereby incorporated into this renewed operating 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 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: September 8, 2017



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 276
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 Energy Carolinas, LLC (the licensee), dated January 11, 2017, 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.

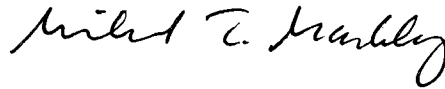
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-17 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 276, are hereby incorporated into this renewed operating 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 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: September 8, 2017

ATTACHMENT

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

LICENSE AMENDMENT NO. 297

RENEWED FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

LICENSE AMENDMENT NO. 276

RENEWED FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NO. 50-370

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove
NPF-9, page 3
NPF-17, page 3

Insert
NPF-9, page 3
NPF-17, page 3

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

Remove
3.1.2-1

Insert
3.1.2-1

- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproducts and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2, and;
 - (6) Pursuant to the Act and 10 CFR Parts 30 and 40, to receive, possess and process for release or transfer such byproduct material as may be produced by the Duke Training and Technology Center.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

The licensee is authorized to operate the facility at a reactor core full steady state power level of 3469 megawatts thermal (100%).
 - (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 297, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.
 - (3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than June 12, 2021, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts, 30, 40 and 70, to possess, but not separate, such byproducts and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2; and,
- (6) Pursuant to the Act and 10 CFR Parts 30 and 40, to receive, possess and process for release or transfer such by product material as may be produced by the Duke Training and Technology Center.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or thereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at a reactor core full steady state power level of 3469 megawatts thermal (100%).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 276, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than March 3, 2023, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59, and otherwise complies with the requirements in that section.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 Core Reactivity

LCO 3.1.2 The measured core reactivity shall be within $\pm 1\%$ $\Delta k/k$ of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Measured core reactivity not within limit.	A.1 Re-evaluate core design and safety analysis, and determine that the reactor core is acceptable for continued operation.	7 days
	<u>AND</u> A.2 Establish appropriate operating restrictions and SRs.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO
AMENDMENT NO. 297 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-9
AND
AMENDMENT NO. 276 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-17
DUKE ENERGY CAROLINAS, LLC
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter to the United States Nuclear Regulatory Commission (NRC) dated January 11, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17025A069), Duke Energy Carolinas, LLC (Duke Energy) submitted an application to seek approval to change the Technical Specification (TSs) for McGuire Nuclear Station, Units 1 and 2 (McGuire).

This license amendment request (LAR) revises TS 3.1.2, "Core Reactivity," to revise the Completion Times of Required Action A.1 and A.2 from 72 hours to 7 days. The licensee stated that the proposed changes are consistent with NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-142-A, Revision 0, "Increase the Completion Time when the Core Reactivity Balance is Not Within Limit," April, 1998 (ADAMS Accession No. ML040490204).

TSTF Travelers are generic changes to the Improved Standard Technical Specifications (STSSs). A list of the Travelers proposed for adoption is included in Enclosure 1 of the LAR. The licensee states that the proposed amendments will bring the McGuire TSs into closer alignment with NUREG-1431, Revision 4.0, "Standard Technical Specifications - Westinghouse Plants." The NRC did not issue a letter approving TSTF-142, Revision 0, however, TSTF-142, Revision 0 was incorporated into Revision 2 of the STSSs issued in April 2001 (ADAMS Accession No. ML011840211).

2.0 REGULATORY EVALUATION

In Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical Specifications," the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36(c), TSs are required to include items in the following five specific categories related to plant operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to

be included in a plant's TSs. The LCOs are the lowest functional capability, or performance levels, of equipment required for safe operation of the facility. When an LCO of a nuclear reactor is not met, the licensee shall follow any remedial actions permitted by the TS until the condition can be met or shall shut down the reactor.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Proposed Changes

McGuire current TS LCO 3.1.2 "Core Reactivity" states that CONDITION A, "Measured core reactivity not within limit", REQUIRED ACTION A.1, "Re-evaluate core design and safety analysis, and determine that the reactor core is acceptable for continued operation" and REQUIRED ACTION A.2, "Establish appropriate operating restrictions and SRs [Surveillance Requirements]," have a COMPLETION TIME of 72 hours.

Revised TS LCO 3.1.2 CONDITION A, REQUIRED ACTIONS A.1 and A.2 COMPLETION TIMES would be extended from "72 hours" to "7 days."

The NRC did not issue a letter approving this change to standard technical specifications (STS) Revision 1; however, this change was incorporated by the NRC into Revision 2 of the STS. TSTF-142-A, Revision 0 extended the STS LCO 3.1.3 (equivalent to McGuire TS 3.1.2) CONDITION A, REQUIRED ACTIONS A.1 and A.2 COMPLETION TIMES from "72 hours" to "7 days." The licensee states that upon the determination that the reactivity balance is not within the specified limit of predicted values, the proposed TS change would allow McGuire TSs seven days to reevaluate core design and safety analyses to determine if the core is acceptable for continued operation, and to establish appropriate operating restrictions and perform appropriate SRs.

Under the current TSs, had the reactivity balance been outside its limits, McGuire would have to be in MODE 3 within six hours. McGuire justifies this extension by stating that, "[r]esolving a predicted versus measured reactivity anomaly is very complex. Data must be gathered, transmitted to the core design organization (which may be an offsite vendor, which would require additional administrative actions), evaluation by the core design organization, and implementation of appropriate controls." The licensee also states that, "exceeding this limit is very unlikely, it is important to allow sufficient time to properly analyze the causes."

In TSTF-142-A, Revision 0 the NRC approved the 7-day period for incorporation into the STS based on the conservatisms used in designing the reactor core and performing the safety analyses, and because of the low probability of a design basis accident or anticipated transient approaching the core design limits occurring during the proposed extended 7-day period.

3.2 NRC Staff's Conclusion

Based on the above, the NRC staff concludes that the proposed TS changes, consistent with TSTF 142-A, Revision 0, would continue to meet the requirements of 10 CFR 50.36(c)(2)(i) and are, therefore, acceptable, since the minimum performance level of equipment needed for safe operation of the facility is contained in the LCO, and the appropriate remedial measures are specified if the LCO is not met.

4.0 PUBLIC COMMENTS

On May 23, 2017, the NRC staff published a "Notice of Consideration of Issuance of Amendments to Facility Operating Licenses, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing," in the *Federal Register* associated with the proposed amendment request (82 FR 23618). In accordance with the requirements in 10 CFR 50.91, the notice provided a 30-day period for public comment on the proposed no significant hazards consideration determination. One comment from a member of the public was received, however, it was not related to the proposed changes to TS 3.1.2 or the determination of no significant hazards consideration. Therefore, no changes were made to these amendments.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the NRC staff notified the North Carolina State official of the proposed issuance of the amendments on July 26, 2017. The State official confirmed on September 6, 2017, that the State of North Carolina had no comments.

6.0 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. 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 this finding (82 FR 23618). 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) there is reasonable assurance that 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 Contributors: D. Woodyatt, NRR

Date: September 8, 2017

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 – ISSUANCE OF
AMENDMENTS ADOPTING TECHNICAL SPECIFICATIONS TASK FORCE
TRAVELER TSTF 142-A, REVISION 0 (CAC NOS. MF9121 AND MF9122)
DATED SEPTEMBER 8, 2017

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DWoodyatt, NRR

ADAMS Accession No.: ML17207A284

*by memorandum

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