



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

March 4, 2022

Mr. Shawn K. Gibby
Vice President
Nuclear Engineering
Duke Energy Corporation
526 South Church Street, EC-07H
Charlotte, NC 28202

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; AND SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – ISSUANCE OF AMENDMENTS TO ADOPT TSTF-577, REVISION 1, “REVISED FREQUENCIES FOR STEAM GENERATOR TUBE INSPECTIONS” (EPID L-2021-LLA-0161)

Dear Mr. Gibby:

The U.S. Nuclear Regulatory Commission (NRC) has issued the following enclosed Amendment Nos. 311 and 307 to Renewed Facility Operating License Nos. NPF-35 and NPF-52 for the Catawba Nuclear Station, Units 1 and 2, respectively; Amendment Nos. 321 and 300 to Renewed Facility Operating License Nos. NPF-9 and NPF-17 for the McGuire Nuclear Station, Units 1 and 2, respectively; and Amendment No. 191 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1.

The amendments revise the technical specifications (TSs) in response to the Duke Energy application dated September 16, 2021. The amendments revise the TSs for each of these facilities based on Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections.”

A copy of the NRC staff’s Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission’s *Federal Register* notice.

If you have any questions, please contact me at (301) 415-8480 or by e-mail at Andrew.Hon@nrc.gov.

Sincerely,

/RA/

Andrew Hon, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-413, 50-414, 50-369,
50-370, and 50-400

Enclosures:

1. Amendment No. 311 to NPF-35
2. Amendment No. 307 to NPF-52
3. Amendment No. 321 to NPF-9
4. Amendment No. 300 to NPF-17
5. Amendment No. 191 to NPF-63
6. Safety Evaluations, Notices and
Environmental Findings

cc: Mr. Robert T. Simril
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Mr. Thomas Ray
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cc: Listserv



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 311
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 Carolinas, LLC (licensee), dated September 16, 2021, 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 amended by 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. 311 which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC 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

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-35
and Technical Specifications

Date of Issuance: March 4, 2022



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 307
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 Carolinas, LLC (licensee), dated September 16, 2021, 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 amended by 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. 307, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC 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

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-52
and the Technical Specifications

Date of Issuance: March 4, 2022

ATTACHMENT TO
CATAWBA NUCLEAR STATION, UNITS 1 AND 2
LICENSE AMENDMENT NO. 311
RENEWED FACILITY OPERATING LICENSE NO. NPF-35
DOCKET NO. 50-413
AND LICENSE AMENDMENT NO. 307
RENEWED FACILITY OPERATING LICENSE NO. NPF-52
DOCKET NO. 50-414

Replace the following pages of the Renewed Facility Operating Licenses and 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

License

NPF-35, page 4
NPF-52, page 4

Technical Specifications

5.5-6
5.5-8
5.5-9
5.5-10
5.5-11
5.6-6

Insert

License

NPF-35, page 4
NPF-52, page 4

Technical Specifications

5.5-6
5.5-8
5.5-9
5.5-10
5.5-11
5.6-6
5.6.7

(2) TECHNICAL SPECIFICATIONS

The Technical Specifications contained in Appendix A, as revised through Amendment No. 311 which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC 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 December 6, 2024, 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) Antitrust Conditions

Duke Energy Carolinas, LLC shall comply with the antitrust conditions delineated in Appendix C to this renewed operating license.

(5) Fire Protection Program

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program that complies with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2013; as supplemented by letters dated January 13, 2015; January 28, 2015; February 27, 2015; March 30, 2015; April 28, 2015; July 15, 2015; August 14, 2015; September 3, 2015; December 11, 2015; January 7, 2016; March 23, 2016; June 15, 2016; August 2, 2016; September 7, 2016; and January 26, 2017, as approved in the SE dated February 8, 2017. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(2) TECHNICAL SPECIFICATIONS

The Technical Specifications contained in Appendix A, as revised through Amendment No. 307, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC 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 December 6, 2024, 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

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5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program (Deleted)

Note: See Section 1.1 for the definition of INSERVICE TESTING PROGRAM.

5.5.9 Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG Program shall include the following:

- a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the

(continued)

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

The following SG tube alternate plugging criteria shall be applied as an alternative to the 40% depth based criteria:

1. For Unit 2 only, tubes with service-induced flaws located greater than 14.01 inches below the top of the tubesheet do not require plugging. Tubes with service-induced flaws located in the portion of the tube from the top of the tubesheet to 14.01 inches below the top of the tubesheet shall be plugged upon detection.

- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. For Unit 1, the number and portions of the tubes inspected and method of inspection shall be performed with the objective of detecting flaws of any type (for example, volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube plugging criteria. The tube-to-tubesheet weld is not part of the tube. For Unit 2, the number and portions of the tubes inspected and method of inspection shall be performed with the objective of detecting flaws of any type (for example, volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet except for any portions of the tube that are exempt from inspection by alternate repair criteria, and that may satisfy the applicable tube plugging criteria. In addition to meeting requirements d.1, d.2, d.3, and d.4 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

(continued)

5.5 Programs and Manuals

5.5.9 Steam Generator (SG) Program (continued)

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.
 2. For Unit 1, after the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 96 effective full power months, which defines the inspection period.
 3. For Unit 2, after the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 54 effective full power months, which defines the inspection period. If none of the SG tubes have ever experienced cracking other than in regions that are exempt from inspection by alternate repair criteria and the SG inspection was performed with enhanced probes, the inspection period may be extended to 72 effective full power months. Enhanced probes have a capability to detect flaws of any type equivalent to or better than array probe technology. The enhanced probes shall be used from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet except any portions of the tube that are exempt from inspection by alternate repair criteria. If there are regions where enhanced probes cannot be used, the tube inspection techniques shall be capable of detecting all forms of existing and potential degradation in that region.
 4. For Unit 1, if crack indications are found in any SG tube, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall be at the next refueling outage. For Unit 2, if crack indications are found in any SG tube excluding any region that is exempt from inspection by alternate repair criteria, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall be at the next refueling outage, but may be deferred to the following refueling outage if the 100% inspection of all SGs was performed with enhanced probes as described in paragraph d.3. If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with crack(s), then the indication need not be treated as a crack.
- e. Provisions for monitoring operational primary to secondary LEAKAGE.

(continued)

Page 5.5-10 has been deleted by Amendment Nos. 311/307

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Page 5.5-11 has been deleted by Amendment Nos. 311/307

5.6 Reporting Requirements (continued)

5.6.8 Steam Generator (SG) Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of the inspection. The report shall include:

- a. The scope of inspections performed on each SG;
- b. The nondestructive examination techniques utilized for tubes with increased degradation susceptibility;
- c. For each degradation mechanism found:
 - 1. The nondestructive examination techniques utilized;
 - 2. The location, orientation (if linear), measured size (if available), and voltage response for each indication. For tube wear at support structures less than 20 percent through-wall, only the total number of indications needs to be reported;
 - 3. A description of the condition monitoring assessment and results, including the margin to the tube integrity performance criteria and comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment; and
 - 4. The number of tubes plugged during the inspection outage.
- d. An analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection (the forward-looking tube integrity assessment) relative to the applicable performance criteria, including the analysis methodology, inputs, and results;
- e. The number and percentage of tubes plugged to date, and the effective plugging percentage in each SG;
- f. The results of any SG secondary side inspections;
- g. For Unit 2, the primary to secondary LEAKAGE rate observed in each SG (if it is not practical to assign leakage to an individual SG, the entire primary to secondary LEAKAGE should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report;

(continued)

5.6 Reporting Requirements

5.6.8 Steam Generator (SG) Tube Inspection Report (continued)

- h. For Unit 2, the calculated accident leakage rate from the portion of the tubes below 14.01 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident leakage rate from the most limiting accident is less than 3.27 times the maximum primary to secondary LEAKAGE rate, the report shall describe how it was determined; and
 - i. For Unit 2, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.
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UNITED STATES
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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. 321
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 Energy Carolinas, LLC (licensee), dated September 16, 2021, 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 amended by 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. 321, 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

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: March 4, 2022



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. 300
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 September 16, 2021, 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 amended by 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. 300 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

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: March 4, 2022

ATTACHMENT TO
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
LICENSE AMENDMENT NO. 321
RENEWED FACILITY OPERATING LICENSE NO. NPF-9
DOCKET NO. 50-369
AND
LICENSE AMENDMENT NO. 300
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 with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License

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

Technical Specifications

5.5-6
5.5-7
5.5-8
5.6-5

Insert

License

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

Technical Specifications

5.5-6
5.5-7
5.5-8
5.6-5

- (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. 321, 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 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 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. 300, 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.

5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program (Deleted)

Note: See Section 1.1 for the definition of INSERVICE TESTING PROGRAM.

5.5.9 Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG Program shall include the following:

- a. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the “as found” condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The “as found” condition refers to the condition of the tubing during an SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.

(continued)

5.5 Programs and Manuals (continued)

5.5.9 Steam Generator (SG) Program (continued)

- b. Performance criteria for SG tube integrity. SG tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational LEAKAGE.
 - 1. Structural integrity performance criterion: All in-service SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, and cool down), all anticipated transients included in the design specification, and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.
 - 2. Accident induced leakage performance criterion: The primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Leakage is not to exceed 0.27 gallons per minute total.
 - 3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."
- c. Provisions for SG tube plugging criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.
- d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube plugging criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

(continued)

5.5 Programs and Manuals (continued)

5.5.9 Steam Generator (SG) Program (continued)

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.
 2. After the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 96 effective full power months, which defines the inspection period.
 3. If crack indications are found in any SG tube, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall be at the next refueling outage. If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.
- e. Provisions for monitoring operational primary to secondary LEAKAGE.

(continued)

5.6 Reporting Requirements

5.6.8 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.9, Steam Generator (SG) Program. The report shall include:

- a. The scope of inspections performed on each SG;
- b. The nondestructive examination techniques utilized for tubes with increased degradation susceptibility;
- c. For each degradation mechanism found:
 1. The nondestructive examination techniques utilized;
 2. The location, orientation (if linear), measured size (if available), and voltage response for each indication. For tube wear at support structures less than 20 percent through-wall, only the total number of indications needs to be reported;
 3. A description of the condition monitoring assessment and results, including the margin to the tube integrity performance criteria and comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment; and
 4. The number of tubes plugged during the inspection outage.
- d. An analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection (the forward-looking tube integrity assessment) relative to the applicable performance criteria, including the analysis methodology, inputs, and results;
- e. The number and percentage of tubes plugged to date, and the effective plugging percentage in each SG; and
- f. The results of any SG secondary side inspections.

(continued)



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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 191
Renewed License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Energy Progress, LLC (the licensee), dated September 16, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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;
 - 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 amended by 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-63 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 191, are hereby incorporated into this license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-63
and the Technical Specifications

Date of Issuance: March 4, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 191
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
RENEWED FACILITY OPERATING LICENSE NO. NPF-63
DOCKET NO. 50-400

Replace the following pages of the Renewed Facility Operating Licenses and 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

Insert

License
NPF-63, Page 4

License
NPF-63, Page 4

Technical Specifications
Remove

Technical Specifications
Insert

6-19d
6-19e
6-19f
6-24a
6-24b

6-19d
6-19e
6-24a
6-24b

- C. This 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
Duke Energy Progress, LLC, is authorized to operate the facility at reactor Core power levels not in excess of 2948 megawatts thermal (100 percent rated core power) in accordance with the conditions specified herein.
 - (2) Technical Specifications and Environmental Protection Plan
The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 191, are hereby incorporated into this license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
 - (3) Antitrust Conditions
Duke Energy Progress, LLC. shall comply with the antitrust conditions delineated in Appendix C to this license.
 - (4) Initial Startup Test Program (Section 14)¹
Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.
 - (5) Steam Generator Tube Rupture (Section 15.6.3)
Prior to startup following the first refueling outage, Carolina Power & Light Company* shall submit for NRC review and receive approval if a steam generator tube rupture analysis, including the assumed operator actions, which demonstrates that the consequences of the design basis steam generator tube rupture event for the Shearon Harris Nuclear Power Plant are less than the acceptance criteria specified in the Standard Review Plan, NUREG-0800, at 15.6.3 Subparts II (1) and (2) for calculated doses from radiological releases. In preparing their analysis Carolina Power & Light Company* will not assume that operators will complete corrective actions within the first thirty minutes after a steam generator tube rupture.

¹The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

* On April 29, 2013, the name of "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

PROCEDURES AND PROGRAMS (Continued)

I. Steam Generator (SG) Program

An SG Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the SG Program shall include the following:

1. Provisions for condition monitoring assessments. Condition monitoring assessment means an evaluation of the "as found" condition of the tubing with respect to the performance criteria for structural integrity and accident induced leakage. The "as found" condition refers to the condition of the tubing during a SG inspection outage, as determined from the inservice inspection results or by other means, prior to the plugging of tubes. Condition monitoring assessments shall be conducted during each outage during which the SG tubes are inspected or plugged to confirm that the performance criteria are being met.
2. Performance criteria for SG tube integrity. Steam generator tube integrity shall be maintained by meeting the performance criteria for tube structural integrity, accident induced leakage, and operational leakage.
 - a) Structural integrity performance criterion. All inservice SG tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, HOT STANDBY, and cooldown), all anticipated transients included in the design specification, and design basis accidents. This includes retaining a safety factor of 3.0 (3 Δ P) against burst under normal steady-state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads.
 - b) Accident induced leakage performance criterion. The primary-to-secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG. Accident induced leakage is not to exceed 1 gpm total for all three SGs.
 - c) The operation leakage performance criterion is specified in LCO 3.4.6.2, "Reactor Coolant System Operational Leakage."

PROCEDURES AND PROGRAMS (Continued)

3. Provisions for SG tube plugging criteria. Tubes found by inservice inspection to contain flaws with depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.
4. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube plugging criteria. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of 4a, 4b, and 4c below, the inspection scope, inspection methods and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. A degradation assessment shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.
 - a) Inspect 100% of the tubes in each SG during the first refueling outage following SG installation.
 - b) After the first refueling outage following SG installation, inspect 100% of the tubes in each SG at least every 96 effective full power months, which defines the inspection period.
 - c) If crack indications are found in any SG tube, then the next inspection for each affected and potentially affected SG for the degradation mechanism that caused the crack indication shall be at the next refueling outage. If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.
5. Provisions for monitoring operational primary-to-secondary leakage.

(PAGE 6-19f DELETED By Amendment No. 191)

6.9.1.6 CORE OPERATING LIMITS REPORT (Continued)

- h. DPC-NE-1008-P-A, "Nuclear Design Methodology Using CASMO-5/SIMULATE-3 for Westinghouse Reactors," as approved by NRC Safety Evaluation dated May 18, 2017.
- i. DPC-NF-2010-A, "Nuclear Physics Methodology for Reload Design," as approved by NRC Safety Evaluation dated May 18, 2017.
- j. DPC-NE-2011-P-A, "Nuclear Design Methodology Report for Core Operating Limits of Westinghouse Reactors" as approved by NRC Safety Evaluation dated May 18, 2017.
- k. DPC-NE-3008-P-A, "Thermal-Hydraulic Models for Transient Analysis," as approved by NRC Safety Evaluation dated April 10, 2018.
- l. DPC-NE-3009-P-A, "FSAR / UFSAR Chapter 15 Transient Analysis Methodology," as approved by NRC Safety Evaluation dated April 10, 2018.
- m. ANP-10341P-A, "The ORFEO-GAIA and ORFEO-NMGRID Critical Heat Flux Correlations," approved version as specified in the COLR.

6.9.1.6.3 The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

6.9.1.6.4 The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements, shall be provided, upon issuance for each reload cycle, to the NRC Document Control Desk, with copies to the Regional Administrator and Resident Inspector.

6.9.1.7 STEAM GENERATOR TUBE INSPECTION REPORT

A report shall be submitted within 180 days after the initial entry into HOT SHUTDOWN following completion of an inspection performed in accordance with Specification 6.8.4.I. The report shall include:

- a. The scope of inspections performed on each SG;
- b. The nondestructive examination techniques utilized for tubes with increased degradation susceptibility;
- c. For each degradation mechanism found:
 - 1. The nondestructive examination techniques utilized;
 - 2. The location, orientation (if linear), measured size (if available), and voltage response for each indication. For tube wear at support structures less than 20 percent through-wall, only the total number of indications needs to be reported;
 - 3. A description of the condition monitoring assessment and results, including the margin to the tube integrity performance criteria and comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment; and
 - 4. The number of tubes plugged during the inspection outage.

ADMINISTRATIVE CONTROLS

6.9.1.7 STEAM GENERATOR TUBE INSPECTION REPORT (Continued)

- d. An analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection (the forward-looking tube integrity assessment) relative to the applicable performance criteria, including the analysis methodology, inputs, and results;
- e. The number and percentage of tubes plugged to date, and the effective plugging percentage in each SG; and
- f. The results of any SG secondary side inspections.

SPECIAL REPORTS

- 6.9.2 Special reports shall be submitted to the NRC in accordance with 10 CFR 50.4 within the time period specified for each report.

6.10 DELETED

(PAGES 6-24c THROUGH 6-24d DELETED By Amendment No. 185)

(PAGE 6-25 DELETED By Amendment No.92)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
 RELATED TO
 AMENDMENT NO. 311 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-35
 AND
 AMENDMENT NO. 307 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-52
 DUKE ENERGY
 CATAWBA NUCLEAR STATION, UNITS 1 AND 2
 DOCKET NOS. 50-413 AND 50-414

<u>Application (i.e., initial and supplements)</u> <ul style="list-style-type: none"> • September 16, 2021, ADAMS Accession No. ML21259A093 	<u>Safety Evaluation Date</u> March 4, 2022
	<u>Principal Contributors to Safety Evaluation</u> <ul style="list-style-type: none"> • Clinton Ashley

1.0 PROPOSED CHANGES

Duke Energy (the licensee) requested changes to the technical specifications (TSs) for Catawba Nuclear Station (CNS), Units 1 and 2, by license amendment request (application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the “Steam Generator (SG) Program” and the “Steam Generator (SG) Tube Inspection Report” TSs based on Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections” (TSTF-577) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21060B434), and the associated NRC staff safety evaluation (SE) of TSTF-577 (ADAMS Accession No. ML21098A188).

The tubes within an SG function as an integral part of the reactor coolant pressure boundary and, in addition, isolate fission products in the primary coolant from the secondary coolant and the environment. SG tube integrity means that the tubes are capable of performing this safety function in accordance with the plant design and licensing basis.

CNS has two Units. The Unit 1 SGs have Alloy 690 thermally treated (Alloy 690TT) tubes. The Unit 2 SGs have Alloy 600 thermally treated (Alloy 600TT) tubes.

1.1 Proposed TS Changes to Adopt TSTF-577

In accordance with NRC staff-approved TSTF-577, the licensee proposed changes that would revise CNS TS 5.5.9, "Steam Generator (SG) Program," and TS 5.6.8, "Steam Generator (SG) Tube Inspection Report." Specifically, the licensee proposed the following changes to adopt TSTF-577:

TS 5.5.9, "Steam Generator (SG) Program":

- TS 5.5.9 introductory paragraph would be revised by replacing "steam generator" with "SG" in a few instances.
- TS 5.5.9.d would be revised by adding a phrase regarding portions of the tube that are exempt from inspection by alternate repair criteria that replaces Unit 2 information specifying distances from top of the tubesheet.
- TS 5.5.9.d.2 and TS 5.5.9.d.3 would be revised by deleting the requirement to base inspection frequency on the more restrictive metric between either the effective full power months (EFPM) or refueling outage and to use just the EFPM metric.
- TS 5.5.9.d.2 and TS 5.5.9.d.3 would be revised by deleting the allowance to extend the inspection period by 3 months and by deleting the discussion of prorating inspections.
- TS 5.5.9.d.2 would be revised by deleting the requirement to inspect 100 percent of the tubes during each period in paragraphs d.2.a, d.2.b, d.2.c, and d.2.d (144, 120, 96, and 72 EFPM, respectively) and by adding the requirement to inspect 100 percent of the tubes every 96 EFPM.
- TS 5.5.9.d.3 would be revised by changing the requirement to inspect 100 percent of the tubes at periods of 120, 96, and 72 EFPM to 54 EFPM. A 72 EFPM inspection period would be permitted if SG tubing has never experienced cracking (not including regions exempt from inspection by alternate repair criteria) and the SG inspection was performed with enhanced probes. A description of the enhanced probe inspection would be added.
- TS 5.5.9.d.4 would be revised by changing the next inspection after crack indications are found from "shall not exceed 24 effective full power months or one refueling outage (whichever results in more frequent inspections)" to "shall be at the next refueling outage."
- TS 5.5.9.d.4 would be revised by adding a phrase regarding portions of the tube that are exempt from inspection by alternate repair criteria that replaces Unit 2 information specifying distances from top of the tubesheet. An additional phrase would be added that permits deferring SG inspections after cracking indications are found if the 100 percent inspection was performed with enhanced probes.

TS 5.6.8, "Steam Generator (SG) Tube Inspection Report":

- Existing reporting requirement b. would be renumbered as c. and be revised by editorial and punctuation changes.

- New reporting requirement b. would be added to require the nondestructive examination (NDE) techniques utilized for tubes with increased degradation susceptibility be reported.
- Existing reporting requirement c. would be renumbered as c.1. and be revised by editorial and punctuation changes.
- Existing reporting requirement d. would be renumbered as c.2. and be revised to note that the location, orientation (if linear), measured size (if available), and voltage response do not need to be reported for tube wear indications at support structures that are less than 20 percent through-wall. However, the total number of tube wear indications at support structures that are less than 20 percent through-wall would be reported.
- New reporting requirement d. would be added to require an analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection relative to the applicable performance criteria, including the analysis, methodology, inputs, and results.
- Existing reporting requirement e. would be renumbered as c.4. and be revised by editorial and punctuation changes.
- Existing reporting requirement f. would be renumbered as e. and be revised by editorial and punctuation changes.
- New reporting requirement f. would be added to require the results of any SG secondary side inspections be reported.
- Existing reporting requirement g. would be renumbered as c.3. and be revised to add the requirements to report a description of the condition monitoring assessment, the margin to the tube integrity performance criteria, and a comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment. In addition, the requirement to report the results of tube pulls and in-situ testing would be deleted.
- Existing reporting requirements h., i., and j. would be renumbered as reporting requirements g., h., and i. and be revised by punctuation changes.

1.2 Additional Proposed TS Changes

In addition to the changes proposed consistent with the traveler discussed in Section 1.1, the licensee proposed the following variations.

1.2.1 Editorial Variations

The licensee noted that CNS uses different numbering than the Standard Technical Specification on which TSTS-577 was based. Specifically, CNS uses TS 5.6.8 for “Steam Generator (SG) Tube Inspection Report” and the TSTF-577 uses TS 5.6.7.

The licensee noted that CNS Unit 1 has a different SG design than CNS Unit 2. Therefore, the current CNS TS 5.5.9 includes requirements specific to Unit 1 and requirements specific to

Unit 2. The proposed TS markups for CNS incorporate the intent of the TSTF-577 changes, while retaining the unit-specific formatting of the existing CNS TSs.

1.2.2 Other Variation

The licensee noted that the CNS SG Program TSs currently contain a provision for an alternate tube plugging criteria. The description of the alternate tube plugging criteria in the proposed change is equivalent to the descriptions in the current CNS TSs.

2.0 REGULATORY EVALUATION

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.36(c)(5), “Administrative controls,” state that “[a]dministrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. Each licensee shall submit any reports to the Commission pursuant to approved technical specifications as specified in [10 CFR] 50.4.” Technical Specification Section 5.0, “Administrative Controls,” requires that an SG Program be established and implemented to ensure that SG tube integrity is maintained. Programs established by the licensee, including the SG Program, are listed in the administrative controls section of the TS to operate the facility in a safe manner.

The NRC staff’s guidance for the review of TSs is in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition” (SRP), Chapter 16.0, “Technical Specifications,” Revision 3, dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STSs for each of the LWR nuclear designs. Accordingly, the NRC staff’s review includes consideration of whether the proposed changes are consistent with NUREG-1431¹, as modified by NRC-approved travelers.

TSTF-577 revised the STSs related to SG tube inspections and SG tube inspection reporting requirements. The NRC approved TSTF-577, under the CLIIP on April 14, 2021 (ADAMS Package Accession No. ML21099A086). It addressed the applicable 10 CFR Part 50, Appendix A, “General Design Criteria for Nuclear Power Plants” requirements with respect to the integrity of the SG tubing.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes to Adopt TSTF-577

In the SE of TSTF-577, the NRC staff concluded that the TSTF-577 changes to STS 5.5.9, “Steam Generator (SG) Program,” and STS 5.6.7, “Steam Generator Tube Inspection Report,” were acceptable because, as discussed in Section 3.0 of that SE,

...they continued to ensure SG tube integrity and, therefore, protected the public health and safety. In particular, the structural integrity performance criterion and accident-induced leakage performance criterion (explained in STS 5.5.9.b, items 1 and 2, respectively) will continue to be met with the proposed revised SG

¹ U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, Westinghouse Plants,” NUREG-1431, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 5, September 2021 (ADAMS Accession Nos. ML21259A155 and ML21259A159, respectively).

inspection intervals (maximum allowable time between SG inspections) and inspection periods (maximum allowable time between 100 percent of SG tubes inspections). Additionally, the proposed changes to the reporting requirements will provide more detailed and consistent information to the NRC. Therefore, the NRC staff found that the proposed changes to the SG program and inspection reporting requirements were acceptable because they continued to meet the requirements of 10 CFR 50.36(c)(5) by providing administrative controls necessary to assure operation of the facility in a safe manner.

The NRC staff compared the licensee's proposed TS changes in Section 1.1 of this SE against the changes approved in TSTF-577. In accordance with SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-577 are applicable because CNS Units 1 and 2 are pressurized water reactors (PWRs) and the NRC staff had generically approved the TSTF-577 changes for all operating PWRs. The NRC staff finds that the licensee's proposed changes to the CNS Units 1 and 2 TSs in Section 1.1 of this SE are consistent with those found acceptable in TSTF-577. Thus, the NRC staff concludes that the corresponding proposed changes to the CNS Units 1 and 2 TSs in Section 1.1 of this SE continue to meet the requirements of 10 CFR 50.36(c)(5).

3.2 Additional Proposed TS Changes

3.2.1 Editorial Variations

The licensee noted that CNS uses different numbering than the Standard Technical Specification on which TSTF-577 was based. Specifically, CNS uses TS 5.6.8 for "Steam Generator (SG) Tube Inspection Report" and the TSTF-577 uses TS 5.6.7. The NRC staff finds the different TS numbering is acceptable because it does not substantively alter TS requirements.

The licensee noted that CNS Unit 1 has a different SG design than CNS Unit 2. Therefore, the current CNS TS 5.5.9 includes requirements specific to Unit 1 and requirements specific to Unit 2. The licensee also noted that the proposed TS markups for CNS incorporate the intent of the TSTF-577 changes, while retaining the unit-specific formatting of the existing CNS TSs. The NRC staff finds the proposed changes to CNS TS 5.5.9 are consistent with the staff-approved TSTF-577 requirements, appropriately identifying Unit applicability due to differences in SG tube alloy, and therefore, are acceptable.

3.2.2 Other Variation

The licensee noted that the CNS SG Program TS currently contains a provision for an alternate tube plugging criteria and the descriptions of the alternate tube plugging criteria in the proposed change are equivalent to the descriptions in the current CNS TS.

The current CNS TS that addresses alternate tube plugging criteria (i.e., TS 5.5.9.c.1) reflects NRC approved changes contained in Amendment No. 267 and Amendment No. 263 for CNS, Units 1 and 2, respectively (ADAMS Accession No. ML12054A692). As part of the request to adopt TSTF-577, the licensee did not propose any changes to these criteria. Therefore, the staff considers this variation as information for awareness purposes, rather than a variation from the traveler or a change to the plant-specific TS.

3.3 TS Change Consistency

The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the existing requirements for customary terminology and formatting. The NRC staff finds that the proposed changes are consistent with Chapter 16.0 of the SRP and are therefore acceptable.

4.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
 RELATED TO
 AMENDMENT NO. 321 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-9 AND
 AMENDMENT NO. 300 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-17
 DUKE ENERGY
 MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
 DOCKET NOS. 50-369 AND 50-370

<u>Application (i.e., initial and supplements)</u> <ul style="list-style-type: none"> • September 16, 2021, ADAMS Accession No. ML21259A093 	<u>Safety Evaluation Date</u> <ul style="list-style-type: none"> • March 4, 2022
	<u>Principal Contributors to Safety Evaluation</u> <ul style="list-style-type: none"> • Clinton Ashley

1.0 PROPOSED CHANGES

Duke Energy (the licensee) requested changes to the technical specifications (TSs) for McGuire Nuclear Station (MNS), Units 1 and 2, by license amendment request (application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the “Steam Generator (SG) Program” and the “Steam Generator (SG) Tube Inspection Report” TSs based on Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections” (TSTF-577) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21060B434), and the associated NRC staff safety evaluation (SE) of TSTF-577 (ADAMS Accession No. ML21098A188).

The tubes within an SG function as an integral part of the reactor coolant pressure boundary and, in addition, isolate fission products in the primary coolant from the secondary coolant and the environment. SG tube integrity means that the tubes are capable of performing this safety function in accordance with the plant design and licensing basis.

MNS has two units. The Unit 1 SGs have Alloy 690 thermally treated (Alloy 690TT) tubes. The Unit 2 SGs have Alloy 690 thermally treated (Alloy 690TT) tubes.

1.1 Proposed TS Changes to Adopt TSTF-577

In accordance with NRC staff-approved TSTF-577, the licensee proposed changes that would revise MNS TS 5.5.9, "Steam Generator (SG) Program," and TS 5.6.8, "Steam Generator Tube Inspection Report." Specifically, the licensee proposed the following changes to adopt TSTF-577:

TS 5.5.9, "Steam Generator (SG) Program":

- The introductory paragraph to TS 5.5.9 would be revised by replacing "steam generator" with "SG" in a couple of instances.
- TS 5.5.9.b.1 would be revised by replacing "steam generator" with "SG" in one instance.
- TS 5.5.9.d.2 would be revised by deleting the requirement to base inspection frequency on the more restrictive metric between either the effective full power months (EFPM) or refueling outage and to use just the EFPM metric.
- TS 5.5.9.d.2 would be revised by deleting the requirement to inspect 100 percent of the tubes during each period in paragraphs d.2.a, d.2.b, d.2.c, and d.2.d (144, 120, 96, and 72 EFPM, respectively) and by adding the requirement to inspect 100 percent of the tubes every 96 EFPM.
- TS 5.5.9.d.2 would be revised by deleting the allowance to extend the inspection period by 3 effective full power months and by deleting the discussion of prorating inspections.
- TS 5.5.9.d.3 would be revised by replacing "shall not exceed 24 effective full power months or one refueling outage (whichever results in more frequent inspections)" with "shall be at the next refueling outage."

TS 5.6.8, "Steam Generator Tube Inspection Report":

- Existing reporting requirement b. would be renumbered as c. and be revised by editorial and punctuation changes.
- New reporting requirement b. would be added to require the nondestructive examination (NDE) techniques utilized for tubes with increased degradation susceptibility be reported.
- Existing reporting requirement c. would be renumbered as c.1. and be revised by editorial and punctuation changes.
- Existing reporting requirement d. would be renumbered as c.2. and be revised to note that the location, orientation (if linear), measured size (if available), and voltage response do not need to be reported for tube wear indications at support structures that are less than 20 percent through-wall. However, the total number of tube wear indications at support structures that are less than 20 percent through-wall would be reported.

- New reporting requirement d. would be added to require an analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection relative to the applicable performance criteria, including the analysis, methodology, inputs, and results.
- Existing reporting requirement e. would be renumbered as c.4. and be revised by editorial and punctuation changes.
- Existing reporting requirement f. would be renumbered as e. and be revised by editorial and punctuation changes.
- New reporting requirement f. would be added to require the results of any SG secondary side inspections be reported.
- Existing reporting requirement g. would be renumbered as c.3. and be revised to add the requirements to report a description of the condition monitoring assessment, the margin to the tube integrity performance criteria, and a comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment. In addition, the requirement to report the results of tube pulls and in-situ testing would be deleted.

1.2 Additional Proposed TS Changes

In addition to the changes proposed consistent with the traveler discussed in Section 1.1, the licensee proposed the following variations.

1.2.3 Editorial Variations

The licensee identified one variation. The licensee noted that MNS TSs have different numbering than standard technical specifications (STs) on which TSTF-577 was based. Specifically, the "Steam Generator Tube Inspection Report" is numbered 5.6.8 in MNS Units 1 and 2 TSs rather than 5.6.7 as stated in the TSTF.

2.0 REGULATORY EVALUATION

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.36(c)(5), "Administrative controls," state that "[a]dministrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. Each licensee shall submit any reports to the Commission pursuant to approved technical specifications as specified in [10 CFR] 50.4." Technical Specification Section 5.0, "Administrative Controls," requires that an SG Program be established and implemented to ensure that SG tube integrity is maintained. Programs established by the licensee, including the SG Program, are listed in the administrative controls section of the TS to operate the facility in a safe manner.

The NRC staff's guidance for the review of TSs is in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP), Chapter 16.0, "Technical Specifications," Revision 3, dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STs for each of the LWR nuclear designs.

Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with NUREG-1431², as modified by NRC-approved travelers.

TSTF-577 revised the STSs related to SG tube inspections and SG tube inspection reporting requirements. The NRC approved TSTF-577, under the CLIIP on April 14, 2021 (ADAMS Package Accession No. ML21099A086). It addressed the applicable 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants" requirements with respect to the integrity of the SG tubing.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes to Adopt TSTF-577

In the SE of TSTF-577, the NRC staff concluded that the TSTF-577 changes to STS 5.5.9, "Steam Generator (SG) Program," and STS 5.6.7, "Steam Generator Tube Inspection Report," were acceptable because, as discussed in Section 3.0 of that SE,

they continued to ensure SG tube integrity and, therefore, protected the public health and safety. In particular, the structural integrity performance criterion and accident-induced leakage performance criterion (explained in STS 5.5.9.b, items 1 and 2, respectively) will continue to be met with the proposed revised SG inspection intervals (maximum allowable time between SG inspections) and inspection periods (maximum allowable time between 100 percent of SG tubes inspections). Additionally, the proposed changes to the reporting requirements will provide more detailed and consistent information to the NRC. Therefore, the NRC staff found that the proposed changes to the SG program and inspection reporting requirements were acceptable because they continued to meet the requirements of 10 CFR 50.36(c)(5) by providing administrative controls necessary to assure operation of the facility in a safe manner.

The NRC staff compared the licensee's proposed TS changes in Section 1.1 of this SE against the changes approved in TSTF-577. In accordance with SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-577 are applicable because MNS is a PWR design plant and the NRC staff approved the TSTF-577 changes for PWR designs. The NRC staff finds that the licensee's proposed changes to the MNS TSs in Section 1.1 of this SE are consistent with those found acceptable in TSTF-577. Thus, the NRC staff concludes that the corresponding proposed changes to the MNS TSs in Section 1.1 of this SE continue to meet the requirements of 10 CFR 50.36(c)(5).

3.2 Additional Proposed TS Changes

3.2.1 Editorial Variations

The licensee noted that MNS TSs have different numbering than STSs on which TSTF-577 was based. Specifically, MNS uses TS 5.6.8 for "Steam Generator Tube Inspection Report" and the

² U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Westinghouse Plants," NUREG-1431, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ADAMS Accession Nos. ML21259A155 and ML21259A159, respectively).

TSTF-577 uses TS 5.6.7. The NRC staff finds that the different TS numbering is acceptable because it does not substantively alter TS requirements.

3.3 TS Change Consistency

The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the existing requirements for customary terminology and formatting. The NRC staff finds that the proposed changes are consistent with Chapter 16.0 of the SRP and are therefore acceptable.

4.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO
AMENDMENT NO. 191 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-63
DUKE ENERGY
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
DOCKET NO. 50-400

<u>Application (i.e., initial and supplements)</u> <ul style="list-style-type: none">September 16, 2021, ADAMS Accession No. ML21259A093	<u>Safety Evaluation Date</u> <ul style="list-style-type: none">March 4, 2022
	<u>Principal Contributors to Safety Evaluation</u> <ul style="list-style-type: none">Clinton Ashley

1.0 PROPOSED CHANGES

Duke Energy (the licensee) requested changes to the technical specifications (TSs) for Shearon Harris Nuclear Power Plant (HNP), Unit 1, by license amendment request (application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIP). The proposed changes would revise the “Steam Generator (SG) Program” and the “Steam Generator (SG) Tube Inspection Report” TSs based on Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections” (TSTF-577) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21060B434), and the associated NRC staff safety evaluation (SE) of TSTF-577 (ADAMS Accession No. ML21098A188).

The tubes within an SG function as an integral part of the reactor coolant pressure boundary and, in addition, isolate fission products in the primary coolant from the secondary coolant and the environment. SG tube integrity means that the tubes are capable of performing this safety function in accordance with the plant design and licensing basis.

HNP has one unit. The Unit 1 SGs have Alloy 690 thermally treated (Alloy 690TT) tubes.

1.1 Proposed TS Changes to Adopt TSTF-577

In accordance with NRC staff-approved TSTF-577, the licensee proposed changes that would revise HNP TS 6.8.4.I, "Steam Generator (SG) Program," and TS 6.9.1.7, "Steam Generator Tube Inspection Report." Specifically, the licensee proposed the following changes to adopt TSTF-577:

TS 6.8.4.I, "Steam Generator (SG) Program":

- The introductory paragraph to TS 6.8.4.I would be revised by replacing "steam generator" with "SG" in a couple instances.
- TS 6.8.4.I.4.b would be revised by deleting the requirement to base inspection frequency on the more restrictive metric between either the effective full power months (EFPM) or refueling outage and to use just the EFPM metric.
- TS 6.8.4.I.4.b would be revised by deleting the requirement to inspect 100 percent of the tubes during each period in paragraphs 4.b.1, 4.b.2, 4.b.3, and 4.b.4 (144, 120, 96, and 72 EFPM, respectively) and by adding the requirement to inspect 100 percent of the tubes every 96 EFPM.
- TS 6.8.4.I.4.b would be revised by deleting the allowance to extend the inspection period by 3 effective full power months and by deleting the discussion of prorating inspections.
- TS 6.8.4.I.4.c would be revised by replacing "shall not exceed 24 effective full power months or one refueling outage (whichever results in more frequent inspections)" with "shall be at the next refueling outage."

TS 6.9.1.7, "Steam Generator Tube Inspection Report":

- Existing reporting requirement b. would be renumbered as c. and be revised by editorial and punctuation changes.
- New reporting requirement b. would be added to require the nondestructive examination (NDE) techniques utilized for tubes with increased degradation susceptibility be reported.
- Existing reporting requirement c. would be renumbered as c.1. and be revised by editorial and punctuation changes.
- Existing reporting requirement d. would be renumbered as c.2. and be revised to note that the location, orientation (if linear), measured size (if available), and voltage response do not need to be reported for tube wear indications at support structures that are less than 20 percent through-wall. However, the total number of tube wear indications at support structures that are less than 20 percent through-wall would be reported.
- New reporting requirement d. would be added to require an analysis summary of the tube integrity conditions predicted to exist at the next scheduled inspection relative to the applicable performance criteria, including the analysis, methodology, inputs, and results.

- Existing reporting requirement e. would be renumbered as c.4. and be revised by editorial and punctuation changes.
- Existing reporting requirement f. would be renumbered as e. and be revised by editorial and punctuation changes.
- New reporting requirement f. would be added to require the results of any SG secondary side inspections be reported.
- Existing reporting requirement g. would be renumbered as c.3. and be revised to add the requirements to report a description of the condition monitoring assessment, the margin to the tube integrity performance criteria, and a comparison with the margin predicted to exist at the inspection by the previous forward-looking tube integrity assessment. In addition, the requirement to report the results of tube pulls and in-situ testing would be deleted.

1.2 Additional Proposed TS Changes

In addition to the changes proposed consistent with the traveler discussed in Section 1.1, the licensee proposed the following variations.

1.2.4 Editorial Variations

The licensee identified one variation. The licensee noted that HNP TS have different numbering than standard technical specifications (STs) on which TSTF-577 was based. Specifically, the “Steam Generator (SG) Program” is numbered 6.8.4.I in HNP Unit 1 TSs rather than 5.5.9 as stated in the TSTF. In addition, the “Steam Generator Tube Inspection Report” is numbered TS 6.9.1.7 in HNP Unit 1 TSs rather than 5.6.7 as stated in the TSTF.

2.0 REGULATORY EVALUATION

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.36(c)(5), “Administrative controls,” state that “[a]dministrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. Each licensee shall submit any reports to the Commission pursuant to approved technical specifications as specified in [10 CFR] 50.4.” Technical Specification Section 5.0, “Administrative Controls,” requires that an SG Program be established and implemented to ensure that SG tube integrity is maintained. Programs established by the licensee, including the SG Program, are listed in the administrative controls section of the TS to operate the facility in a safe manner.

The NRC staff’s guidance for the review of TSs is in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition” (SRP), Chapter 16.0, “Technical Specifications,” Revision 3, dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STs for each of the LWR nuclear designs.

Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with NUREG-1431³, as modified by NRC-approved travelers.

TSTF-577 revised the STSs related to SG tube inspections and SG tube inspection reporting requirements. The NRC approved TSTF-577, under the CLIIP on April 14, 2021 (ADAMS Package Accession No. ML21099A086). It addressed the applicable 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants" requirements with respect to the integrity of the SG tubing.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes to Adopt TSTF-577

In the SE of TSTF-577, the NRC staff concluded that the TSTF-577 changes to STS 5.5.9, "Steam Generator (SG) Program," and STS 5.6.7, "Steam Generator Tube Inspection Report," were acceptable because, as discussed in Section 3.0 of that SE,

they continued to ensure SG tube integrity and, therefore, protected the public health and safety. In particular, the structural integrity performance criterion and accident-induced leakage performance criterion (explained in STS 5.5.9.b, items 1 and 2, respectively) will continue to be met with the proposed revised SG inspection intervals (maximum allowable time between SG inspections) and inspection periods (maximum allowable time between 100 percent of SG tubes inspections). Additionally, the proposed changes to the reporting requirements will provide more detailed and consistent information to the NRC. Therefore, the NRC staff found that the proposed changes to the SG program and inspection reporting requirements were acceptable because they continued to meet the requirements of 10 CFR 50.36(c)(5) by providing administrative controls necessary to assure operation of the facility in a safe manner.

The NRC staff compared the licensee's proposed TS changes in Section 1.1 of this SE against the changes approved in TSTF-577. In accordance with SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-577 are applicable because HNP is a PWR design plant and the NRC staff approved the TSTF-577 changes for PWR designs. The NRC staff finds that the licensee's proposed changes to the HNP TSs in Section 1.1 of this SE are consistent with those found acceptable in TSTF-577. Thus, the NRC staff concludes that the corresponding proposed changes to the HNP TSs in Section 1.1 of this SE continue to meet the requirements of 10 CFR 50.36(c)(5).

3.2 Additional Proposed TS Changes

3.2.1 Editorial Variations

The licensee identified one variation. The licensee noted that HNP TSs have different numbering than STSs on which TSTF-577 was based. Specifically, the "Steam Generator (SG) Program" is numbered 6.8.4.I in HNP Unit 1 TSs rather than 5.5.9 as stated in the TSTF. In addition, the "Steam Generator Tube Inspection Report" is numbered TS 6.9.1.7 in HNP Unit 1

³ U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Westinghouse Plants," NUREG-1431, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ADAMS Accession Nos. ML21259A155 and ML21259A159, respectively).

TSs rather than 5.6.7 as stated in the TSTF. The NRC staff finds that the different TS numbering is acceptable because it does not substantively alter TS requirements.

3.3 TS Change Consistency

The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the existing requirements for customary terminology and formatting. The NRC staff finds that the proposed changes are consistent with Chapter 16.0 of the SRP and are therefore acceptable.

4.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

NOTICES AND ENVIRONMENTAL FINDINGS
 RELATED TO
 AMENDMENT NO. 311 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-35
 AND
 AMENDMENT NO. 307 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-52
 DUKE ENERGY
 CATAWBA NUCLEAR STATION, UNITS 1 AND 2
 DOCKET NOS. 50-413 AND 50-414
 AMENDMENT NO. 321 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-9
 AND
 AMENDMENT NO. 300 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-17
 DUKE ENERGY
 MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
 DOCKET NOS. 50-369 AND 50-370
 AMENDMENT NO. 191 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-63
 DUKE ENERGY
 SHEARON HARRIS NUCLEAR STATION, UNITS 1
 DOCKET NO. 50-400

<u>Application (i.e., initial and supplements)</u> <ul style="list-style-type: none"> September 16, 2021, ADAMS Accession No. ML21259A093 	<u>Safety Evaluation Date</u> March 4, 2022
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1.0 INTRODUCTION

Duke Energy (the licensee) requested changes to the technical specifications (TSs) for Catawba Nuclear Station, Units 1 and 2, McGuire Nuclear Station, Units 1 and 2, and Shearon Harris Nuclear Power Plant, Unit 1 by license amendment request (application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the “Steam Generator (SG) Program” and the “Steam Generator (SG) Tube Inspection Report” TSs based on Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections” (TSTF-577) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21060B434), and the associated NRC staff safety evaluation (SE) of TSTF-577 (ADAMS Accession No. ML21098A188).

2.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina and South Carolina State officials were notified of the proposed issuance of the amendment on January 24 ,2022. The State officials had no comments.

3.0 ENVIRONMENTAL CONSIDERATION

The amendment relates, in part, to changes in recordkeeping, reporting, or administrative procedures or requirements. The amendment also relates, in part, to changing requirements with respect to the installation or use of facility components located within the restricted area as defined in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on December 28, 2021 (86 FR 73815). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; AND SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – ISSUANCE OF AMENDMENTS TO ADOPT TSTF-577, REVISION 1, “REVISED FREQUENCIES FOR STEAM GENERATOR TUBE INSPECTIONS” (EPID L-2021-LLA-0161) DATED MARCH 4, 2022

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OFFICE	NRR/DORL/LPL2-2/PM	NRR/DORL/LPL2-2/LA	NRR/DSS/STSB/BC
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OFFICE	OGC/NLO	NRR/DORL/LPL2-2/BC	NRR/DORL/LPL2-2/PM
NAME	N/A*	DWrona	AHon
DATE	12/16/2021	3/4/2022	3/4/2022

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