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

January 16, 2019

Mr. Thomas D. Ray
Site 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 AMENDMENT NOS. 311 AND 290 TO CORRECT NON-CONSERVATIVE TECHNICAL SPECIFICATION 3.4.11, "PRESSURIZER POWER OPERATED RELIEF VALVES (PORVS)" (EPID L-2018-LLA-0067)

Dear Mr. Ray:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment Nos. 311 and 290 to Renewed Facility Operating License Nos. NPF-9 and NPF-17 for the McGuire Nuclear Station, Units 1 and 2, respectively. The amendments revise the Technical Specifications (TSs) in response to the application from Duke Energy Carolinas, LLC dated February 26, 2018, as supplemented by letter dated September 13, 2018.

The amendments revise TS 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)," to correct non-conservative TSs. A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

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. 311 to NPF-9
2. Amendment No. 290 to NPF-17
3. Safety Evaluation

cc: 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. 311
Renewed License No. NPF-9

1. The U.S. 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 February 26, 2018, as supplemented by letter dated September 13, 2018, 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. 311, 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 60 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 the Renewed License
and Technical Specifications

Date of Issuance: January 16, 2019

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. 290
Renewed License No. NPF-17

1. The U.S. 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 February 26, 2018, as supplemented by letter dated September 13, 2018, 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. 290, 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 60 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 the Renewed License
and Technical Specifications

Date of Issuance: January 16, 2019

ATTACHMENT

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

LICENSE AMENDMENT NO. 311

RENEWED FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

LICENSE AMENDMENT NO. 290

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

Replace the following pages of 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
TS 3.4.11-1	TS 3.4.11-1
TS 3.4.11-2	TS 3.4.11-2
TS 3.4.11-3	TS 3.4.11-3
TS 3.4.11-4	TS 3.4.11-4
-	TS 3.4.11-5
-	TS 3.4.11-6

(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. 311, 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 my 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. 290, 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.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each PORV and each block valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One Train B PORV inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions B.1 and B.2 are not applicable to a PORV made inoperable by Required Action G.2. ----------	
	B.1 Close associated block valve.	1 hour
	AND	
	B.2 Remove power from associated block valve.	1 hour

(continued)

ACTIONS (continued)

C.	One Train A PORV inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions C.1 and C.2 are not applicable to a PORV made inoperable by Required Action H.2. ----------	
		C.1 Close associated block valve.	1 hour
		AND	
		C.2 Remove power from associated block valve.	1 hour
		AND	
		C.3 Restore PORV to OPERABLE status.	72 hours
D.	Two Train B PORVs inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions D.1 and D.2 are not applicable to PORVs made inoperable by Required Action I.2. ----------	
		D.1 Close associated block valves.	1 hour
		AND	
		D.2 Remove power from associated block valves.	1 hour
		AND	
		D.3 Restore one PORV to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

E.	Required Action and associated Completion Time of Condition A, B, C, or D not met.	E.1	Be in MODE 3.	6 hours
		AND		
		E.2	Be in MODE 4.	12 hours
F.	Three PORVs inoperable and not capable of being manually cycled.	F.1	Close associated block valves.	1 hour
		AND		
		F.2	Remove power from associated block valves.	1 hour
		AND		
		F.3	Be in MODE 3.	6 hours
		AND		
		F.4	Be in MODE 4.	12 hours
G.	One Train B block valve inoperable.	----------NOTE---------- Required Actions G.1 and G.2 are not applicable to a block valve made inoperable by Required Action B.2. ----------		
		G.1	Place associated PORV switch in closed position and verify PORV closed.	1 hour
		AND		
		G.2	Remove power from associated PORV.	1 hour

(continued)

ACTIONS (continued)

H.	One Train A block valve inoperable.	----------NOTE---------- Required Actions H.1 and H.2 are not applicable to a block valve made inoperable by Required Action C.2. ----------	
		H.1 Place associated PORV switch in closed position and verify PORV closed.	1 hour
		AND	
		H.2 Remove power from associated PORV.	1 hour
		AND	
		H.3 Restore block valve to OPERABLE status.	72 hours
I.	Two Train B block valves inoperable.	----------NOTE---------- Required Actions I.1 and I.2 are not applicable to block valves made inoperable by Required Action D.2. ----------	
		I.1 Place associated PORV switches in closed position and verify PORVs closed.	1 hour
		AND	
		I.2 Remove power from associated PORVs.	1 hour
		AND	
		I.3 Restore one block valve to OPERABLE status.	72 hours

(continued)

ACTIONS (continued)

J.	One Train B PORV inoperable and not capable of being manually cycled AND The other Train B block valve inoperable.	J.1	Perform Required Actions B.1 and B.2. AND	1 hour
		J.2	Perform Required Actions G.1 and G.2. AND	1 hour
		J.3.1	Restore PORV to OPERABLE status. OR	72 hours
		J.3.2	Restore block valve to OPERABLE status.	72 hours
K.	Three block valves inoperable.	----------NOTE---------- Required Action K.1 is not applicable to block valves made inoperable by Required Action F.2. ----------		
		K.1	Place associated PORV switches in closed position and verify PORVs closed. AND	1 hour
		K.2	Restore one block valve to OPERABLE status.	2 hours
L.	Required Action and associated Completion Time of Condition G, H, I, J, or K not met.	L.1	Be in MODE 3. AND	6 hours
		L.2	Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 ----------NOTE---------- Not required to be met with block valve closed in accordance with the Required Action of Condition A, B, C, D, or F. ---------- Perform a complete cycle of each block valve.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.2 ----------NOTE---------- Required to be performed in MODE 3 or MODE 4 when the temperature of all RCS cold legs is > 300°F and the block valve closed. ---------- Perform a complete cycle of each PORV.	In accordance with the Surveillance Frequency Control Program
SR 3.4.11.3 Verify the nitrogen supply for each PORV is OPERABLE by: a. Manually transferring motive power from the air supply to the nitrogen supply, b. Isolating and venting the air supply, and c. Operating the PORV through one complete cycle.	In accordance with the Surveillance Frequency Control Program

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-9

AND

AMENDMENT NO. 290 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 dated February 26, 2018, as supplemented by letter dated September 13, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML18065A180 and ML18262A207, respectively), Duke Energy Carolinas, LLC (the licensee) submitted a license amendment request to change the Technical Specifications (TSs) for the McGuire Nuclear Station, Units 1 and 2. The licensee requested to revise TS 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)," to correct non-conservative TSs. The supplemental letter dated September 13, 2018, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on July 31, 2018 (83 FR 36974).

2.0 REGULATORY EVALUATION

2.1 System Descriptions and Requirements

The licensee provided a description in Section 2.1, "System Design and Operation," of its February 26, 2018, letter:

> The pressurizer is equipped with two types of devices for pressure relief: pressurizer safety valves and PORVs. The safety valves are enclosed and self-actuating and provide, in conjunction with the Reactor Protection System, overpressure protection for the Reactor Coolant System (RCS). The safety valves are part of the primary success path and mitigate the effects of postulated accidents. The PORVs are air operated valves that are controlled to open at

pressures below the safety valve setpoint values so as not to unnecessarily challenge the safety valves and also are used for RCS Low Temperature Overpressure Protection (LTOP).

The PORVs may also be manually operated from the control room. Each PORV is a fail closed (spring actuated) valve with gas assist. In order to open a given PORV, the solenoid on top of the piston must vent (energize) and the solenoid beneath the piston must supply gas (energize) against the force of the spring to open the valve. To close the PORV, the solenoid above the piston de-energizes to supply gas above the piston to assist the spring in closure while the solenoid beneath the piston vents (de-energizes) to allow the valve to close. There are three PORVs per unit (Unit 1: 1 NC-32B, 1 NC-34A, and 1 NC-36B; Unit 2: 2NC-32B, 2NC-34A, and 2NC-36B). 1(2)NC-34A and 1(2)NC-32B are used for LTOP.

Block valves (Unit 1: 1NC-31B, 1NC-33A, and 1NC-35B; Unit 2: 2NC-31B, 2NC-33A, and 2NC-35B), which are normally open, are located between the pressurizer and the PORVs. The block valves are used to isolate the PORVs in case of excessive leakage or a stuck open PORV. Block valve closure is accomplished manually using controls in the control room. PORVs and block valves belong to either Train A or Train B as designated by the last letter in the valve number.

The PORVs and their associated block valves may be used by plant operators to depressurize the RCS to recover from certain transients if normal pressurizer spray is not available. Additionally, the series arrangement of the PORVs and their block valves permit performance of surveillances on the valves.

The PORVs, their block valves, and their controls are powered from the vital buses that normally receive power from offsite power sources, but are also capable of being powered from emergency power sources in the event of a loss of offsite power. The PORVs and their associated block valves are powered from two separate safety trains. For the Train B PORVs, all four solenoid valves are powered from the same breaker. Power can be independently removed from a Train B PORV to prevent it from changing position.

For the Steam Generator Tube Rupture (SGTR) event, the safety analysis assumes that manual operator actions are required to mitigate the event. A loss of offsite power is assumed to accompany the event, and thus, normal pressurizer spray is unavailable to reduce RCS pressure. For a case in which the Instrument Air (VI) system is unavailable (this system provides normal motive force for the pressurizer spray valves and the pressurizer PORVs), the operator aligns the back-up RCS Cold Leg Accumulator (CLA) nitrogen gas as a motive force for the pressurizer PORVs. For the Train B PORVs, the nitrogen gas is supplied from CLA B through a common valve (1(2)NI-431B). The PORVs are assumed to be used for manual RCS depressurization, which is one of the steps performed to equalize the primary and secondary pressures in order to terminate the primary to secondary break flow and the radioactive releases from the affected steam generator.

The TS 3.4.11 Limiting Condition for Operation (LCO) currently states: "Each PORV and associated block valve shall be OPERABLE." The LCO is applicable in Modes 1, 2 and 3. The

Actions table contains various described Conditions when the PORVs & block valves are inoperable and the associated Required Actions and Completion Times that must be met when each particular condition occurs. The Actions are applicable on a per-unit basis, that is, the operability of a PORV or Block Valve on Unit 1 will not impact the determination of which Condition Unit 2 may be in. The LCO requires the PORVs and their associated block valves to be operable for manual operation to mitigate overpressure events and conditions associated with a SGTR event. By maintaining two trains of PORVs and their associated block valves operable, the single failure criterion is satisfied. Satisfying the LCO helps minimize challenges to fission product barriers.

In section 2.3 of its submittal the licensee states:

> TS 3.4.11 Conditions B and C Required Actions currently allow one PORV or one block valve, regardless of which train, to be inoperable in Modes 1, 2 and 3 without a time to return it to operable status. If the inoperable PORV or block valve is associated with Train A, this allowance could have an undesirable single failure impact since the Train B PORVs are not redundant. The Train B PORVs are powered from the same breaker and share a common nitrogen supply valve. A failure of the breaker would de-energize all four of the Train B solenoids and close both Train B PORVs. Likewise, a failure of the nitrogen supply valve would affect both Train B PORVs. TS 3.4.11 Required Actions currently allow continued plant operation with only one train of PORV(s) operable which does not satisfy the single failure requirement for the PORVs. This is considered to be non-conforming to the requirements of 10 CFR 50.36.

2.2 Licensee's Proposed Changes

The licensee proposed to revise TS 3.4.11 to correct non-conservative TSs as follows:

- Revise the Actions Note to apply to the block valves in addition to the PORVs. The current TS 3.4.11 Actions Note states, "Separate Condition entry is allowed for each PORV." Revised TS 3.4.11 Actions Note would state, "Separate Condition entry is allowed for each PORV and each block valve."

- Divide current Condition B (for one or two PORVs inoperable and not capable of being manually cycled) into three separate conditions: (1) One Train B PORV inoperable and not capable of being manually cycled (new Condition B), (2) One Train A PORV inoperable and not capable of being manually cycled (new Condition C), and (3) Two Train B PORVs inoperable and not capable of being manually cycled (new Condition D).

New Condition B would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Train B PORV inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions B.1 and B.2 are not applicable to a PORV made inoperable by Required Action G.2. ----------	
	B.1 Close associated block valve.	1 hour
	AND	
	B.2 Remove power from associated block valve.	1 hour

New Condition C would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One Train A PORV inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions C.1 and C.2 are not applicable to a PORV made inoperable by Required Action H.2. ----------	
	C.1 Close associated block valve.	1 hour
	AND	
	C.2 Remove power from associated block valve.	1 hour
	AND	
	C.3 Restore PORV to OPERABLE Status.	72 hours

New Condition D would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two Train B PORVs inoperable and not capable of being manually cycled.	----------NOTE---------- Required Actions D.1 and D.2 are not applicable to PORVs made inoperable by Required Action I.2. ----------	
	D.1 Close associated block valves.	1 hour
	AND	
	D.2 Remove power from associated block valve.	1 hour
	AND	
	D.3 Restore PORV to OPERABLE status.	72 hours

- Divide current Condition C (for One block valve inoperable) into two separate Conditions: (1) One Train B block valve inoperable (new Condition G) and (2) one Train A block valve inoperable (new Condition H).

New Condition G would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One Train B block valve inoperable.	----------NOTE---------- Required Actions G.1 and G.2 are not applicable to a block valve made inoperable by Required Action B.2. ----------	
	G.1 Place associated PORV switch in closed position and verify PORV closed.	1 hour
	AND	
	G.2 Remove power from associated PORV.	1 hour

New Condition H would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. One Train A block valve inoperable.	----------NOTE---------- Required Actions H.1 and H.2 are not applicable to a block valve made inoperable by Required Action C.2. ----------	
	H.1 Place associated PORV switch in closed position and verify PORV closed.	1 hour
	AND	
	H.2 Remove power from associated PORV.	1 hour
	AND	
	H.3 Restore block valve to OPERABLE status.	72 hours

- Revise current Condition D, that states, "Required Actions and Completions Time of Condition A, B, or C not met," by renaming it as Condition E, which would state, "Required Action and associated Completion Time of Condition A, B, C, or D not met."

- Rename current Condition E (for Three PORVs inoperable and not capable of being manually cycled) as Condition F, with no additional changes.

- Revise current Condition F (for Two block valves inoperable) as new Condition I (for Two Train B block valves inoperable). New Condition I would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
I. Two Train B block valves inoperable.	----------NOTE---------- Required Actions I.1 and I.2 are not applicable to block valves made inoperable by Required Action D.2. ----------	
	I.1 Place associated PORV switches in closed position and verify PORVs closed.	1 hour
	AND	
	I.2 Remove power from associated PORVs.	1 hour
	AND	
	I.3 Restore one block valve to OPERABLE status.	72 hours

- Add a new Condition J (for when One Train B PORV inoperable and not capable of being manually cycled and the other Train B block valve inoperable). New Condition J would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. One Train B PORV inoperable and not capable of being manually cycled AND The other Train B block valve inoperable.	J.1 Perform Required Actions B.1 and B.2. AND J.2 Perform Required Actions G.1 and G.2. AND J.3.1 Restore PORV to OPERABLE status. OR J.3.2 Restore block valve to OPERABLE status.	1 hour 1 hour 72 hours 72 hours

- Revise current Condition G (for Three block valves inoperable) to be new Condition K. New Condition K would state:

CONDITION	REQUIRED ACTION	COMPLETION TIME
K. Three block valves inoperable.	----------NOTE---------- Required Action K.1 is not applicable to block valves made inoperable by Required Action F.2. ---------- K.1 Place associated PORV switches in closed position and verify PORVs closed. AND K.2 Restore one block valve to OPERABLE status.	 1 hour 2 hours

- Revise current Condition H and rename it as new Condition L. Current Condition H describes the situation where the required actions and associated completion time of current Condition F or G are not met. In this situation, the plant must be placed in Mode 3 within 6 hours and in Mode 4 within 12 hours. Current Condition H will contain the same required actions and completion times, but will be renamed Condition L, and will state, "Required Action and associated Completion Time of Condition G, H, I, J, or K not met."

- Revise the Note in Surveillance Requirement (SR) 3.4.11.1. The current SR 3.4.11.1 Note states, "Not required to be met with block valve closed in accordance with the Required Action of Condition A, B, or E." Revised Note 3.4.11.1 to state, "Not required to be met with block valve closed in accordance with the Required Action of Condition A, B, C, D, or F."

2.3 Applicable Regulations and Guidance

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(b) requires the technical specifications to be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto.

Section 50.36(c)(2)(i) of 10 CFR states, in part, that limiting conditions for operation (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 shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

As discussed in 10 CFR 50.36(c)(3), SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCO will be met.

NRC staff guidance for review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan," published March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STSs) for each of the light-water reactor nuclear designs. NUREG-1431 contains the guidance for the format and content of TSs for Westinghouse-designed plants.

3.0 TECHNICAL EVALUATION

As discussed in the second paragraph of Generic Letter 80-30, "Clarification of the Term "Operable" As It Applies to Single Failure Criterion For Safety Systems Required by TS," the STSs were formulated to preserve the single failure criterion for systems that are relied upon in the safety analysis report by specifying LCOs that require all redundant components of safety related systems to be OPERABLE. When the required redundancy is not maintained, either due to equipment failure or maintenance outage, action is required, within a specified time, to change the operating mode of the plant to place it in a safe condition. The specified time to take action (i.e., the Completion Time per current STSs terminology), is a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time to fix equipment or otherwise make it OPERABLE. If equipment can be returned to OPERABLE status within the Completion Time, a plant shutdown is not required.

As discussed in Section 2.1 above, the two Train B PORVs are not redundant because they are powered from the same breaker and share a common nitrogen supply valve. The current TSs may allow the Train A PORV or block valve to be inoperable without a restoration time. This allowance can have an undesirable single failure impact because the Train B PORVs are not redundant.

The licensee provided justifications for the changes to the actions table of TS 3.4.11, as well as SR 3.4.11.1. The licensee stated that by formulating TS 3.4.11 as proposed, the single failure criterion is preserved for the pressurizer PORVs and associated block valves.

Review of TS 3.4.11 Actions Note

The NRC staff reviewed the change to the Note modifying the actions table for TS 3.4.11 and determined that the Note will clarify that all pressurizer PORVs and block valves are treated as separate entities, each with separate completion times. The NRC staff noted that this proposed change is consistent with NUREG-1431, Revision 4, and determined that the change to the Note is acceptable.

Review of New Condition B

If one Train B PORV is inoperable and not capable of being manually cycled, the licensee must either restore it to operable status or isolate it by closing and removing power from the associated block valve within 1 hour. The NRC staff determined that the completion time of 1 hour for Required Actions B.1 and B.2 is reasonable based on challenges to the PORVs during this time period, and it provides the operator adequate time to correct the situation. Required Actions B.1 and B.2 are modified by a Note stating that these required actions are not applicable to a Train B PORV made inoperable by Required Action G.2. The NRC staff determined that the Note is acceptable because in the situation where a PORV is made inoperable by Required Action G.2, one Train B PORV and one Train A PORV would remain operable, and continued plant operation is allowed after Required Action G.2 is completed.

Review of New Condition C

If one Train A PORV is inoperable and not capable of being manually cycled, it must be either restored or isolated by closing and removing power from the associated block valve within 1 hour. The NRC staff determined that the completion time of 1 hour for Required Actions C.1 and C.2 is reasonable, based on challenges to the PORVs during this time period, and provides the operator adequate time to correct the situation. The NRC staff determined that the 72-hour completion time for Required Action C.3 is acceptable because at least one Train B PORV remains operable during restoration of the inoperable PORV to operable status. Required Actions C.1 and C.2 are modified by a Note stating that these required actions are not applicable to a Train A PORV made inoperable by Required Action H.2. The NRC staff determined that the Note is acceptable because in the situation where a PORV is made inoperable by Required Action H.2, one Train B PORV and one Train A PORV would remain operable, and continued plant operation is allowed after Required Action H.2 is completed.

Review of New Condition D

If two Train B PORVs are inoperable and not capable of being manually cycled, they must either be restored or isolated by closing and removing power from the associated block valves within 1 hour. The NRC staff determined that the completion time of 1 hour for Required Actions D.1

and D.2 is reasonable, based on challenges to the PORVs during this time period, and provides the operator adequate time to correct the situation. The NRC staff determined that the 72-hour completion time for Required Action D.3 is acceptable because at least one Train A PORV remains operable during restoration of the inoperable PORVs to operable status. Required Actions D.1 and D.2 are modified by a Note stating that these required actions are not applicable to PORVs made inoperable by Required Action I.2. The NRC staff determined that the Note is acceptable because in the situation where two PORVs are made inoperable by Required Action I.2, one Train A PORV would remain operable, and continued plant operation is allowed after Required Action I.2 is completed.

Review of Existing Condition D as Relettered to Condition E

New Condition D is added to the list of required actions and associated completion times not met to accommodate the proposed changes. The NRC staff determined that the relettering of current Condition D to E and the addition of New Condition D to the list of applicable conditions in Condition E are acceptable to maintain the actions table integrity. If the required actions of Conditions A, B, C, or D are not met, then the plant must be brought to a mode in which the LCO does not apply. To achieve this status, the plant must be brought to at least Mode 3 within 6 hours and to Mode 4 within 12 hours. Based on its consideration of operating experience, the NRC staff finds that the allowed completion times are reasonable to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Review of Existing Condition E as Relettered to Condition F

New Condition F describes the situation where three PORVs are inoperable and not capable of being manually cycled. In this condition, it is necessary to either restore at least one PORV or isolate the flow paths by closing and removing power from the associated block valves within 1 hour per Required Actions F.1 and F.2, respectively. The completion time of 1 hour for Required Actions F.1 and F.2 is reasonable because of the small potential for challenges to the system during this time period, and it provides the operator adequate time to correct the situation. If one PORV is restored and two PORVs remain inoperable, then the plant will either be in new Conditions B and C, or in new Conditions B and D, with the Condition B, C, or D completion time clocks starting at the original declaration of having three PORVs inoperable. If PORVs are not restored within the completion times, then the plant must be brought to a mode in which the LCO does not apply. To achieve this status, the plant must be brought to at least Mode 3 within 6 hours, and to Mode 4 within 12 hours, per Required Actions F.3 and F.4, respectively. The required actions and completion times were not changed from current Condition E. The NRC staff determined that the relettering is administrative and, therefore, acceptable.

Review of New Condition G

If one Train B block valve is inoperable, the licensee must either restore it to operable status or place the associated PORV switch in the closed position and remove power from the associated PORV within 1 hour. The NRC staff determined that the completion time of 1 hour is reasonable based on the small potential for challenges to the system during this time period, and 1 hour provides the operator time to correct the situation. Required Actions G .1 and G.2 are modified by a Note stating that these required actions are not applicable to a block valve made inoperable by Required Action B.2. The NRC staff determined that the Note is acceptable because in the situation where a block valve is made inoperable by Required Action B.2, one Train B PORV and the associated block valve and one Train A PORV and the associated block

valve remain operable, and continued plant operation is allowed after Required Action B.2 is completed.

Review of New Condition H

If the Train A block valve is inoperable and is not restored to operable status within 1 hour, then the required action is to place the PORV in the closed position and remove power from the solenoid within 1 hour to preclude its automatic opening for an overpressure event and to avoid the potential for a stuck open PORV during the time the block valve is inoperable. The NRC staff determined that the completion times of Required Actions H.1 and H.2 are acceptable because of the small potential for challenges to the system during this time period, and 1 hour provides the operator time to correct the situation. The NRC staff determined that the 72-hour completion time of Required Action H.3 is acceptable because at least one Train B PORV and the associated block valve remain operable during restoration of the inoperable block valve to operable status. Required Actions H.1 and H.2 are modified by a Note stating that these required actions are not applicable to a block valve made inoperable by Required Action C.2. The NRC staff determined that the Note is acceptable because in the situation where a block valve is made inoperable by Required Action C.2, one Train B PORV and the associated block valve and one Train A PORV and the associated block valve remain operable, and continued plant operation is allowed after Required Action C.2 is completed.

Review of New Condition I

If two Train B block valves are inoperable and are not restored to operable status within 1 hour, then the required action is to place the PORV in the closed position and remove power from the solenoid within 1 hour to preclude its automatic opening for an overpressure event and to avoid the potential for a stuck open PORV during the time the block valve is inoperable. The NRC staff determined that the completion times of Required Actions I.1 and I.2 are acceptable because of the small potential for challenges to the system during this time period, and 1 hour provides the operator time to correct the situation. The NRC staff determined that the 72-hour completion time of Required Action I.3 is acceptable because at least one Train A PORV and the associated block valve remain operable during restoration of the inoperable block valves to operable status. Required Actions I.1 and I.2 are modified by a Note stating that these required actions are not applicable to block valves made inoperable by Required Action D.2. The NRC staff determined that the Note is acceptable because in the situation where block valves are made inoperable by Required Action D.2, one Train A PORV and the associated block valve remain operable, and continued plant operation is allowed after Required Action D.2 is completed.

Review of New Condition J

If one Train B PORV and the other Train B block valve are inoperable, then it is necessary to either restore the PORV or block valve to operable status within the completion time of 1 hour or perform the required actions of Conditions B and G within 1 hour. The NRC staff determined that the completion time of 1 hour is acceptable for Required Actions J.1 and J.2 because of the small potential for challenges to the system during this time period and the need to provide the operator adequate time to correct the situation. The NRC staff determined that the completion time of 72 hours for Required Actions J.3.1 and J.3.2 are acceptable because one Train A PORV and the associated block valve remain operable during restoration of either the Train B PORV or other Train B block valve to operable status.

Review of New Condition K

If three block valves are inoperable, it is necessary to place the associated PORVs in the closed position and verify PORVs closed within 1 hour and restore at least one block valve to operable status within 2 hours. The NRC staff determined that the completion times of 1 hour and 2 hours are acceptable for Required Actions K.1 and K.2, respectively, because of the small potential for challenges to the system during this time period and the need to provide the operator adequate time to correct the situation. Required Action K.1 is modified by a Note stating that Required Action K.1 is not applicable to block valves made inoperable by Required Action F.2. The NRC staff determined that the Note is acceptable because in the situation where 3 block valves are made inoperable by Required Action F.2, the required actions of Condition F provide the appropriate remedial actions to maintain plant safety.

Review of Existing Condition H as Relettered to Condition L

New Conditions G, H, I, J, or K are added to the list of required actions and associated completion times not met in new Condition L to accommodate for the proposed changes. Existing Conditions F and G are deleted from the list. The NRC staff determined that the relettering and additions and deletions of conditions are acceptable to maintain the actions table integrity. If the required actions of Conditions G, H, I, J, or K are not met, then the plant must be brought to a mode in which the LCO does not apply. To achieve this status, the plant must be brought to at least Mode 3 within 6 hours and to Mode 4 within 12 hours. The NRC staff has determined that the allowed completion times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Review of the Revised SR 3.4.11.1 Note

The NRC staff determined that the changes to revised SR 3.4.11.1 Note are necessary conforming changes to maintain consistency within the TSs, as modified, and that they do not change the requirements of the SR itself. Therefore, the NRC staff determined that the changes are acceptable.

Technical Evaluation Summary

Section 50.36(b) of 10 CFR requires TSs to be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto. The licensee provided an evaluation of the Pressurizer PORVs that supported the proposed revisions to TS 3.4.11 to remove a non-conservatism from the TSs. The NRC staff reviewed the proposed changes and the licensee's justifications for the changes. The NRC staff determined that the changes remove the non-conservatism from TS 3.4.11, and each new condition and revised condition will allow TS 3.4.11 to meet the regulatory requirements of 10 CFR 50.36(c)(2). Additionally, the NRC staff determined that SR 3.4.11.1, as revised, will continue to meet the regulatory requirements of 10 CFR 50.36(c)(3). Therefore, the NRC staff concludes the proposed changes are acceptable.

4.0 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 November 14, 2018. The NRC staff confirmed on November 26, 2018, that the North Carolina State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change inspections or SRs. 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 (83 FR 36974; July 31, 2018). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) 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: M. Hamm
M. Mahoney

Date: January 16, 2019

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 311 AND 290 TO CORRECT NON-CONSERVATIVE TECHNICAL SPECIFICATION 3.4.11, "PRESSURIZER POWER OPERATED RELIEF VALVES (PORVS)" (EPID L-2018-LLA-0067) DATED JANUARY 16, 2019

DISTRIBUTION:
PUBLIC
PM File Copy
RidsACRS_MailCTR Resource
RidsNrrLAKGoldstein Resource
RidsNrrLpl2-1 Resource
RidsNrrDssStsb Resource
RidsNrrDssSrxb Resource
RidsNrrDeEmib Resource
RidsNrrPMMcGuire Resource
RidsRgn2MailCenter Resource
MHamm, NRR

ADAMS Accession No.: ML18318A358 **by e-mail

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DSS/STSB/BC	DE/EMIB/BC
NAME	MMahoney	PTalukdur/LRonewicz	VCusumano	SBailey**
DATE	11/21/18	11/21/2018	12/3/18	12/3/18
OFFICE	DSS/SRXB/BC	OGC – NLO**	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	JWhitman	STurk (with comments)	MMarkley	MMahoney
DATE	12/11/18	12/19/18	1/16/19	1/16/19

OFFICIAL RECORD COPY