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10 CFR 50.90

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U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

ATTENTION: Document Control Desk

Duke Energy Carolinas, LLC (Duke Energy)
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370
Renewed License Nos. NPF-9 and NPF-17

Subject: Response to NRC letter dated September 14, 2015, "McGuire Nuclear Station, Units 1 AND 2: Request for Additional Information Regarding License Amendment Request Nuclear Service Water System Allowed Outage Time Extension (TAC NOS. MF2983 AND MF2984)"

References:

1. Duke Energy Letter dated June 30, 2015, "License Amendment Request for Temporary Changes to Technical Specifications for Correction of an 'A' Train Nuclear Service Water System (NSWS) Degraded Condition" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15191A025).
2. Nuclear Regulatory Commission (NRC) Letter dated July 27, 2015 "McGuire Nuclear Station, Units 1 and 2 - Acceptance Review of License Amendment Request RE: Temporary Changes to Technical Specifications for Correction of Nuclear Service Water System Degraded Condition (TAC NOS. MF6409 AND MF6410)" (ADAMS Accession No. ML15202A661)
3. Duke Energy Letter dated August 11, 2015, "Response to Request for Additional Information Regarding License Amendment Request for Temporary Changes to Technical Specifications for Correction of an 'A' Train Nuclear Service Water System (NSWS) Degraded Condition (TAC Nos. MF6409 and MF 6410)" (ADAMS Accession No. ML15247A066)
4. NRC Letter dated August 27, 2015, "McGuire Nuclear Station, Units 1 AND 2: Request for Additional Information Regarding License Amendment Request Nuclear Service Water System Allowed Outage Time Extension (TAC NOS. MF2983 AND MF2984)" (ADAMS Accession No. ML15237A416)

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5. Duke Energy Letter dated September 24, 2015, "Response to Request for Additional Information Regarding License Amendment Request for Temporary Changes to Technical Specifications for Correction of an 'A' Train Nuclear Service Water System (NSWS) Degraded Condition (MF2983 AND MF2984)"
6. NRC Letter dated September 14, 2015, "McGuire Nuclear Station, Units 1 AND 2: Request for Additional Information Regarding License Amendment Request Nuclear Service Water System Allowed Outage Time Extension (TAC NOS. MF2983 AND MF2984)" (ADAMS Accession No. ML15252A276)

By letter dated June 30, 2015 (Reference 1), Duke Energy requested a license amendment for the Renewed Facility Operating Licenses (FOL) and Technical Specifications (TS) for the McGuire Nuclear Station, Units 1 and 2, to allow temporary changes to TS 3.5.2, Emergency Core Cooling System (ECCS) - Operating; TS 3.6.6, Containment Spray System (CSS); TS 3.7.5, Auxiliary Feedwater (AFW) System; TS 3.7.6, Component Cooling Water (CCW) System; TS 3.7.7, Nuclear Service Water System (NSWS); TS 3.7.9, Control Room Area Ventilation System (CRAVS); TS 3.7.11, Auxiliary Building Filtered Ventilation Exhaust System (ABFVES), and TS 3.8.1, AC Sources- Operating.

By letter dated August 11, 2015 (Reference 3), Duke Energy responded to NRC letter dated July 27, 2015 (Reference 2), request for additional information (RAI) needed for completion of NRC staff review of the proposed LAR.

By letter dated September 24, 2015 (Reference 5), Duke Energy responded to NRC letter dated August 27, 2015 (Reference 4), RAI needed for completion of NRC staff review of the proposed LAR.

By letter dated September 14, 2015 (Reference 6), the NRC provided Duke Energy a third RAI needed for completion of the NRC staff review of the LAR. The enclosure provides Duke Energy's responses to the RAI questions.

There are no new regulatory commitments with this submittal. However, Attachment 1 in the enclosure revises existing commitments 2 and 21 from their original form in Reference 1.

The June 30, 2015, LAR concluded that the proposed change presents No Significant Hazards Considerations, and does not require an environmental assessment. This conclusion has not changed as a result of the RAI responses in the enclosure.

Pursuant to 10 CFR 50.91, a copy of this LAR has been forwarded to the appropriate North Carolina state officials.

Please direct any comments or questions regarding this submittal to George Murphy at (980) 875-5715.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 08, 2015.

Sincerely,

A handwritten signature in black ink, appearing to read "SD Capps", written in a cursive style.

Steven D. Capps

Enclosure:

Response to Request for Additional Information

US Nuclear Regulatory Commission
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cc w/ Enclosure:

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ENCLOSURE

Response to Request for Additional Information

Response to Request for Additional Information

REQUEST FOR ADDITIONAL INFORMATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO A LICENSE AMENDMENT REQUEST SUPPORTING CORRECTION OF A
NUCLEAR SERVICE WATER SYSTEM DEGRADED CONDITION
DUKE ENERGY CAROLINAS, LLC
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-369 AND 50-370

By letter dated June 30, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15191A025), Duke Energy Carolinas, LLC (Duke Energy) submitted a license amendment request (LAR) to temporarily change McGuire Nuclear Station (MNS), Units 1 and 2, Technical Specifications (TSs) for correction of a degraded condition affecting the 'A' Train of the nuclear service water system (NSWS). The requested amendment would temporarily change the following TSs to allow the inoperability of the 'A' Train of the NSWS for a total of up to 14 days: TS 3.5.2, Emergency Core Cooling System (ECCS) - Operating; TS 3.6.6, Containment Spray System (CSS); TS 3.7.5, Auxiliary Feedwater (AFW) System; TS 3.7.6, Component Cooling Water (CCW) System; TS 3.7.7, Nuclear Service Water System (NSWS); TS 3.7.9, Control Room Area Ventilation System (CRAVS); TS 3.7.11, Auxiliary Building Filtered Ventilation Exhaust System (ABFVES), and TS 3.8.1, AC Sources-Operating. The 'A' Train of the shared NSWS would be inoperable while the safety-related supply from the MNS Nuclear Service Water Pond was drained and isolated to correct a degraded condition affecting that line.

Based on the NRC staff's review of this amendment request, the NRC staff has determined the following additional information is necessary to support completion of its technical review:

SCVB-RAI-001

The license amendment focuses on the temporary alignments and changes requested for the NSWS, however, these changes impact other systems. For the CSS, CRAVS, and the ABFVES:

- a. Explain the available capabilities of the above systems during the time when the requested temporary TS would be enacted.
- b. Discuss the impact of any deviations from standard alignment and operation of the systems.

Response to Request for Additional Information

Duke Energy Response SCVB-RAI-001

- a. "Explain the available capabilities of the above systems during the time when the requested temporary technical specifications changes would be enacted."

The 'A' Train of the CRAVS, ABFVES, and CSS are supported by 'A' Train NSWS as discussed in Reference 1. These systems are expected to remain in their normal operating alignments during the time that the temporary TS changes would be enacted. These systems will be operated in accordance with their respective normal operating procedures during the extended completion time of the proposed LAR.

The 'A' Train safety related systems supported by NSWS will remain functional while the temporary TS changes are in affect but not operable due to the unavailability of the NSW flow path from the 'A' Standby Nuclear Service Water Pond (SNSWP). These systems remain capable of meeting their individual safety functions for all design bases events excluding the loss of the Low Level Intake (LLI) caused by a significant seismic event. The 'B' Train NSWS and all supported SSCs are expected to remain operable during the time that the temporary TS changes would be enacted.

- b. Discuss the impact of any deviations from standard alignment and operation of the systems.

The ABFVES will be affected by the use of a second access manway in the auxiliary building. The access manway when open will have controls in place to ensure that the auxiliary building ventilation boundary is maintained.

No system deviations for CSS or CRAVS are expected or planned.

Response to Request for Additional Information

SRXB-RAI-001

While the approach taken in the proposed LAR is a qualitative risk approach, please address the need to preclude potentially high-risk plant configurations that could result if additional equipment, not associated with the proposed change, is taken out of service during the proposed Allowed Outage Time (AOT) extension. Provide a justification to limiting the prohibition of discretionary maintenance to the following systems:

- a. 1A EDG;
- b. 2A EDG;
- c. The 'A' Train of NSWS excluding the activities described in the LAR for the 'A' Train NSWS piping to the SNSWP;
- d. The 'B' Train of NSWS, ECCS, CSS, AFW, CCW, CRAVS, ABFVES or the EDGs;
- e. The switchyard and other offsite power sources; and
- f. The SSF.

Specifically, provide a justification for not implementing a broader limitation on discretionary maintenance (e.g., such as that of the cited STPNOC precedent (ML050100291), "*STPNOC will not perform any planned voluntary maintenance in Unit 1 during the extended AOT (EAOT) that would increase the ICCDP.*").

Duke Energy Response SRXB-RAI-001

The MNS Electronic Risk Assessment Tool (ERAT) shows that plant risk remains green during performance of activities under the extended completion time of the proposed LAR. The tool considers both internal and external initiating events with the exception of seismic events. MNS will be voluntarily setting the ERAT risk to yellow using the built in code SSA (Safety Significant Activity), which will cause the risk condition color to be "YELLOW." This action will focus site attention on the significance of the proposed LAR activities.

A broader limitation for restricting maintenance activities during the proposed amendment activities is not necessary because no discretionary maintenance will be performed that could adversely affect site focus on the LAR activities during the extended Completion Time (CT). As discussed in the LAR, no discretionary maintenance or discretionary testing will be planned on either NSWS Train except for the 'A' Train NSWS piping to the SNSWP. Additionally, no discretionary maintenance or discretionary testing will be performed on any of the equipment listed in Attachment 1, Regulatory Commitment 6.

Response to Request for Additional Information

SRXB-RAI-002

The LAR lists the following equipment to be protected during the AOT extension of the 'A' train of NSWS:

- a. 'B' Train NSWS
- b. 1B EDG
- c. 2B EDG
- d. 1B ECCS
- e. 2B ECCS
- f. 1B CSS
- g. 2B CSS
- h. 1B AFW
- i. 2B AFW
- j. 1B CCW
- k. 2B CCW
- l. B CRAVS
- m. B ABFVES
- n. Auxiliary Building WZ Sump and equipment supporting function of sump

Provide a discussion on the criteria used to determine the protected equipment. Include a justification for not including the turbine driven AFW pump, Containment Ventilation Cooling Water (RV) system and the Standby Shutdown Facility (SSF) standby makeup pump, which appears to be important to managing the risk of the proposed AOT extension.

Duke Energy Response SRXB-RAI-002

Fleet Directive AD-OP-ALL-0201, Protected Equipment, provides the guidance for identifying equipment to be protected. The procedure guidance for selection of protected equipment is based on risk and unavailability of SSCs. Both the 1A and 2A NSWS pumps will remain available and functional during the extended CT allowed for under the proposed license amendment. The ERAT risk also would remain green for the proposed amendment request activities. However, MNS agrees to modify the protected equipment list provided in Reference 1. The Turbine Driven AFW pump, the Containment Ventilation Cooling Water (RV) system, and the Standby Shutdown Facility including the standby makeup pump were added to the list of protected equipment documented in commitment 21, in Attachment 1.

Response to Request for Additional Information

SRXB-RAI-003

Clarify whether any maintenance will be allowed on the 'A' Train NSWWS that would impact the ability of the system to operate taking suction from the Lake Norman Low Level Intake (LLI) (even if these activities are within the 72 completion time) during the period that the Standby Nuclear Service Water Pond (SNSWP) suction is not available for the 'A' train of NSWWS.

Specifically, address what is meant by the following statement in section 3.5 of the LAR:

Any maintenance that is performed on the remaining portions of the 'A' Train NSWWS during the period in which the 'A' NSWWS piping from the SNSWP is not available will be limited to a 72 hour completion time.

Duke Energy Response SRXB-RAI-003

The statement "Any maintenance that is performed on the remaining portions of 'A' Train NSWWS during the period in which the 'A' NSWWS from the SNSWP supply piping is not available will be limited to a 72 hour completion time" was included in the proposed amendment to ensure that use of the extended CT was applicable only to the activities described in the LAR. The LAR also included the following statement: "During this period, no discretionary maintenance or discretionary testing will be planned on either NSWWS Train except for the 'A' Train NSWWS piping to the SNSWP described in this proposed amendment". This condition was added to minimize impact on the stability and ability of the 'A' Train NSWWS to operate taking suction from the Lake Norman LLI.

MNS will revise the current statement in commitment 2 of Reference 1 to read as follows: "Any maintenance that is performed on the remaining portions of 'A' Train NSWWS during the period in which the 'A' NSWWS piping from the SNSWP is not available will be evaluated for impact on the ability of the system to operate while taking suction from the Lake Norman Low Level Intake (LLI) and will be limited to a 72 hour completion time". This is documented in Attachment 1.

ATTACHMENT 1

Regulatory Commitments

REGULATORY COMMITMENTS

The following table identifies those actions committed to by Duke Energy in this document. Any other statements made in this licensing submittal are provided for informational purposes only and are not considered to be regulatory commitments. Please direct any questions you may have in this matter to George Murphy at 980-875-5715.

#	REGULATORY COMMITMENTS
1	The 'A' Train NSWs pumps will remain running and aligned to Lake Norman during the extended CT until the system is ready for post maintenance testing.
2	<p>Any maintenance that is performed on the remaining portions of 'A' Train NSWs during the period in which the 'A' NSWs from the SNSWP supply piping is not available will be limited to a 72 hour completion time</p> <p>Any maintenance that is performed on the remaining portions of 'A' Train NSWs during the period in which the 'A' NSWs piping from the SNSWP is not available will be evaluated for impact on the ability of the system to operate while taking suction from the Lake Norman Low Level Intake (LLI) and will be limited to a 72 hour completion time.</p>
3	The 'B' Train NSWs will be placed in its ESFAS alignment to the SNSWP water source with the 'B' Train pumps in standby prior to starting the LAR activity and remain in this alignment until the 'A' Train NSWs SNSWP water source is restored and ready for post maintenance testing.
4	Procedures will be established to provide an additional defense in depth contingency that could be used in the event of an extremely low probability of a loss of the Lake Norman water source due to a seismic event. The procedures will ensure that system operation is maintained within design limits (less than or equal to 2 NSWs pumps running on a header), control of maximum system flow, and that system configuration prevents interaction of the degraded equipment with the functional equipment.
5	Fukushima Response FLEX modifications will be installed and the FLEX strategies will be available for implementation as additional defense-in-depth on both units.
6	<p>During the period in which the 'A' NSWs suction path from the SNSWP is non-functional, no discretionary maintenance or discretionary testing will be planned on the following:</p> <ol style="list-style-type: none"> 1A EDG 2A EDG The 'A' Train of NSWs excluding the activities described in the LAR for the 'A' Train NSWs piping to the SNSWP. The 'B' Train of NSWs, ECCS, CSS, AFW, CCW, CRAVS, ABFVES or the EDGs The switchyard and other offsite power sources The SSF
7	A condition in which repairs could impact the ability of an SSC to perform its Safety Function would result in termination of activities. The inspection may identify a condition that cannot be resolved within the 14 day completion time. Should such a condition be identified then the system will be restored to its current OBDN condition. If the ROV survey presents any opportunities for a less intrusive or less time consuming solution for addressing the OBDN condition, then these opportunities will be pursued, as appropriate.

8	In an activity planned to be performed this summer separate from the 14 day completion time repair activity, 0RN-7A will be tested for leakage and adjusted if necessary to minimize leakage.
9	In an activity planned to be performed this summer separate from the 14 day completion time repair activity the SNSWP isolation flange will be test fitted to the 'A' SNSWP pipe.
10	Procedure guidance will establish controls to limit evacuation air pressure to less than a predetermined value in order to prevent air intrusion into the operating NSWS.
11	Dedicated personnel with procedure guidance will be provided to close the pathway from the auxiliary building on the affected 'A' Train NSWS piping from the SNSWP in the event of any of the following: <ul style="list-style-type: none"> • An Engineered Safety Feature (ESF) actuation • Entry into RP/0/A/5700/006 Natural Disasters • Entry into RP/0/A/5700/007 Earthquake
12	This activity will be controlled under the Infrequently Performed Test or Evolution (IPTE) process defined in Fleet Directive AD-OP-ALL-106, "Conduct of Infrequently Performed Tests or Evolutions", and Duke Energy's Work Management and Execution procedures.
13	Dedicated personnel will be available for monitoring and immediate response to unanticipated leakage. Procedural actions will provide guidance to stop the leakage. If the leakage cannot be stopped, then dedicated personnel will establish NSWS flow from the 'B' Train NSWS, shutdown the 'A' Train NSWS pumps and close 0RN-12AG to stop the leakage. During periods when the new NSWS manway is open, dedicated personnel having communication to the main control room with procedures to continuously monitor and respond to 0RN-7A leakage will be in place. If leakage increases and reaches the pre-determined leak rate limit, the repair activity will be stopped, and the manway will be closed. If conditions prevent the prompt closure of the manway, then operations will place the 'B' NSWS train in operation, secure 'A' NSWS operations and isolate the 'A' NSWS train to stop the leakage.
14	If the second personnel access opening is necessary, then prior to the opening of the system an evaluation of leakage will be performed to validate proper isolation and that leakage is within expected limits.
15	McGuire will communicate with the Transmission Control Center (TCC) to ensure that the McGuire Control Room is notified in the event of potential grid disturbances in order that an appropriate plant response can be formulated.
16	The Work Control Center or OCC will monitor weather forecasts and radar during the activities that require the NSWS piping personnel access points to be open to assess the potential for severe weather conditions (tornado, thunderstorms).
17	Training will be provided in accordance with the Systematic Approach to Training (SAT) process to Operations personnel on this TS change and the associated evolution to inspect and correct the degraded condition in the 'A' NSWS supply piping from the SNSWP.
18	Operations will review applicable abnormal operating procedures related to the response to an earthquake, the loss of the Lake Norman and the loss of NSWS prior to making 'A' NSWS suction path from the SNSWP inoperable and each shift until 'A' Train NSWS operability is restored.
19	The repair work on the NSWS 'A' Train suction from the SNSWP will be scheduled during a period in which hurricanes and tornadoes have a lower likelihood of occurrence.
20	The Outage Command Center (OCC) will be manned while performing the activities

	authorized by this amendment.
21	<p>The following list of equipment will be protected:</p> <ul style="list-style-type: none"> a. 'B' Train NSWS b. 1B EDG c. 2B EDG d. 1B ECCS e. 2B ECCS f. 1B CSS g. 2B CSS h. 1B AFW i. 2B AFW j. 1B CCW k. 2B CCW l. B CRAVS m. B ABFVES n. Auxiliary Building WZ Sump and equipment supporting function of sump o. SSF including Standby Makeup pumps for Unit 1 and Unit 2 p. Unit 1 TDCAP q. Unit 2 TDCAP r. Unit 1 Containment Ventilation Cooling Water System (RV) s. Unit 2 Containment Ventilation Cooling Water System (RV)
22	If required to be installed the new personnel access opening to be located on the 'A' Train NSWS piping in the auxiliary building will be designed and installed in accordance with the Engineering Change Process.
23	Foreign Material Exclusion (FME) will be controlled during the proposed activities in accordance with AD-MN-ALL-0002, Foreign Material Exclusion (FME). Any debris resulting from the obstruction removal activity will be mechanically cleaned out before the system is closed for return to service per FME plan developed in accordance with the above procedure. The system will be video inspected and reversed flushed from the LLI to the SNSWP with isolation to downstream components to force any sediment back to the SNSWP.
24	Following 'A' Train NSWS restoration, testing will be performed to verify that the as left NSWS performance meets or exceeds pre-activity performance including 'A' Train NSW pump NPSH conditions.
25	Prior to entering the 14 day CT perform an evaluation to ensure that there will be no anticipated impact to 'A' NSWS water supply from the LLI from Alewife fish the during 14 day CT.
26	The new personnel access piping opening (in the auxiliary building) will be controlled by using procedures developed or revised for this purpose to maintain positive control of the opening and to prevent an unmonitored release.
27	The ERAT program includes the option to use a SSA (Safety Significant Activity) code which will cause the risk condition color to be "YELLOW". MNS will use this code during the activities described in this LAR.
28	Designated operators will be available to execute the manual actions associated with aligning the affected unit's 'A' Train NSWS pump to the 'B' NSWS SNSWP via the Main Supply Crossover piping.
29	If the contingency personnel access opening is installed, then Security personnel will establish the proper controls and compensatory measures prescribed by security procedures and the security plan.

30	<p>In support of the contingency the following conditions will be established before the start of activities in the LAR:</p> <ul style="list-style-type: none"> • The 'A' valve (0RN-14A) will be opened prior to the evolution and power will be removed from the valve operator. • The 'B' valve (0RN-15B) will be maintained closed with the ESFAS signal from each unit blocked prior to the evolution. Maintaining 0RN-15B closed with power removed satisfies operability requirements for the 'B' Train NSWS. The 'B' valve (0RN-15B) can be opened from the control room after power is restored if conditions warrant the use of this contingency.
31	<p>Operations will utilize the concurrent dual verification process when operating 0RN-7A.</p>