



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

September 24, 2012

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

SUBJECT: MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT RELATED TO REVISING TECHNICAL SPECIFICATION 3.7.7, "NUCLEAR SERVICE WATER SYSTEM" (TAC NOS. ME8118 AND ME8119)

Dear Mr. Capps:

By letter dated February 22, 2012, Duke Energy Carolinas, LLC (the licensee), submitted a proposed license amendment to change the McGuire Nuclear Station, Units 1 and 2 (McGuire 1 and 2), Technical Specifications (TSs). The proposed change revises the TSs to allow the use of the nuclear service water system (NSWS) pump discharge crossover valves and associated piping to crosstie McGuire 1 and 2 NSWS trains to mitigate a Loss of Service Water event at McGuire 1 or 2.

The U.S. Nuclear Regulatory Commission staff has reviewed the licensee's submittal and determined that additional information is needed in order to complete our review. The enclosed document describes this request for additional information.

If you have any questions, please call me at 301-415-1119.

Sincerely,

A handwritten signature in cursive script that reads "Jon Thompson".

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369 and 50-370

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
REGARDING LICENSE AMENDMENT REQUEST RELATED TO REVISING  
TECHNICAL SPECIFICATION 3.7.7, NUCLEAR SERVICE WATER SYSTEM  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2  
DOCKET NOS. 50-369 AND 50-370

By letter dated February 22, 2012 (Agencywide Documents Access and Management System Accession No. ML12061A008), Duke Energy Carolinas, LLC (Duke Energy, the licensee), submitted a license amendment request (LAR) to change the McGuire Nuclear Station, Units 1 and 2 (McGuire 1 and 2), Technical Specifications (TSs). The proposed change revises the TSs to allow the use of the nuclear service water system (NSWS) pump discharge crossover valves and associated piping to cross tie McGuire 1 and 2 NSWS trains to mitigate a Loss of Service Water event at McGuire 1 or 2.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal and determined that the following additional information is needed in order to complete our review:

1. The licensee stated in the LAR that one train of the shared Service Water (SW) system in the operable Unit would be used to supply the SW system of the affected Unit experiencing a Loss of Service Water (LOSW) event. The licensee also stated that abnormal procedures will limit the flow rate from the shared SW train during a LOSW event to the surplus capacity existing after adequate cooling capacity is retained to support the availability of the train's dedicated Unit Emergency Diesel Generator (EDG) and long-term operation of the shared NSWS pump. The LAR does not describe how much flow is needed from one SW train to support the operation of the shared Unit EDG and NSWS pump throughout the 72 hour Completion Time as indicated in Condition A of TS 3.7.7. The LAR also does not describe how the procedures will monitor the shared SW train flow into the affected Unit.

The NRC staff requests for the licensee to provide additional information on:

- a. How much SW flow is needed to supply the EDG and NSWS pump in the sharing unit and how much surplus capacity of the remaining SW flow will be available for the unit experiencing the LOSW event?
- b. How the unit experiencing the LOSW event will utilize the shared SW to mitigate the LOSW event over the 72 hour time period?

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- c. How the operators will utilize abnormal procedures to monitor the SW flow from the sharing unit to the affected Unit over the 72 hour time period? In addition, explain whether these abnormal procedures will be developed specifically for this alignment. (SBPB 1)
2. The licensee is requesting to revise TS 3.7.7, "Limiting Condition of Operations", Condition A by adding a Note, "A NSW train may be shared with another unit to mitigate a LOSW event." The licensee stated that the placement of the Note in TS 3.7.7 Condition A restricts the exception to the activities allowed in TS 3.0.2 LCO Bases and to a LOSW event. The licensee also stated in the LAR that the location of the Note also limits the shared alignment to 72 hours consistent with the Completion Time (CT) established for an inoperable NSW system / train per unit.

However, the staff considers the proposed Note as written in the TS markup pages could possibly allow subsequent entries into Condition A of TS 3.7.7 after the initial 72 hour time period has elapsed. Multiple entries into Condition A of TS 3.7.7 could negatively impact the inventory needed to support the SW system for the sharing unit.

The NRC staff requests that the licensee reassess and provide justification that the proposed Note for Condition A prevents multiple entries into TS 3.7.7 for the sharing unit after the initial 72 hours of a LOSW event. (SBPB 2)

3. The licensee stated in the LAR that the NSW pump discharge header crossover manual valves are normally closed and that the valves can be aligned to use one of two available NSW trains to the unit experiencing a LOSW event. The LAR does not describe how long it will take for operators to utilize this alignment after a LOSW event occurs and what other actions will be needed throughout the 72 hour period.

The staff requests that the licensee describe the crosstie alignment process, as far as how long it will take for operators to manually align the crossover valves after a LOSW occurs and if other manual actions are needed during the LOSW event. The staff also requests information on training and testing completed that substantiates those operator actions can be completed within the times necessary to mitigate a LOSW event. (SBPB 3)

4. Describe the required operator actions that support implementation of the proposed LAR. (AHPB 1)
5. Are there any additions to, deletions of, or changes to current operator actions required to support this LAR? If yes, continue. If no, provide the answers to Questions 1 and 2 only. (AHPB 2)
6. What are the changes, deletions, or additions to procedures associated with this LAR? (AHPB 3)

7. Are there any changes to the time available for the affected actions or the time required to complete the action(s)? If yes, what are the available times and the observed completion times (seconds, minutes, hours) associated with performing the action(s) before and after the LAR? (AHPB 4)
8. What cues and/or alarms will be provided for required operator action(s) identified in Question 1, above? (AHPB 5)
9. Will there be any control room or remote shutdown panel modifications associated with this request? If so, what changes will take place, and when? (AHPB 6)
10. Will the required actions be performed by one operator or more than one? Will it require the coordination of an operator at each unit? (AHPB 7)
11. Will the task analysis that is the basis for the Emergency Operating Procedures (EOPs), control room equipment, training, and qualification require revision? If not, how will the operators' needs be determined? (AHPB 8)
12. How will personnel know when to initiate the action(s)? (AHPB 9)
13. How will personnel know that the action(s) was performed correctly? (AHPB 10)
14. How will personnel know when the action(s) should be terminated? (AHPB 11)
15. Have likely human errors and their potential consequences been identified? If yes, describe errors analyzed. If no, why not? (AHPB 12)
16. Will the proposed action(s) require additional staffing or qualification? (AHPB 13)
17. Can the action(s) be performed within the analyzed time constraints
  - a. With minimum control room staffing?
  - b. With normal control room staffing?
  - c. Under environmental conditions expected, e.g. emergency lighting, noise, heat, outdoor elements?
  - d. Using required equipment, such as self-contained breathing apparatus, PCs, hand-carried meters, or tools? (AHPB 14)
18. Was a review of operating experience (OE) done to support the LAR? If yes, what insights were derived? If OE not reviewed, why not? (AHPB 15)
19. Was a Human Reliability Analysis (HRA) done to support this LAR? If yes, what insights were derived? If HRA not performed, why not? (AHPB 16)

20. Were additions, deletions, or changes made to the training program? If yes, describe. If no, justify why not. (AHPB 17)
21. Was any verification and validation of operator actions performed, or is any planned? (AHPB 18)
22. Is any follow-up or long-term monitoring of this change planned? (AHPB 19)
23. Who has the responsibility to establish the crosstie that is needed? (AHPB 20)
24. You rely on the Frequency Control Program to define the frequency with which surveillance is done. Please describe the program. (AHPB 21)

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/RA/

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
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DATE	09/24/12	09/20/12	09/24/12	09/24/12

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