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A Duke Energy Company

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May 24, 2007

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Document Control Desk

Subject: Duke Power Company LLC d/b/a
Duke Energy Carolinas, LLC (Duke)
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370

License Amendment Request for Technical Specification 3.6.3, Containment Isolation Valves. Response to Request for Additional Information

Reference 1: Duke letter to NRC dated July 31, 2006

This letter provides the additional information requested by the NRC staff via electronic mail from John F. Stang on April 25, 2007. The NRC staff's questions and Duke's responses are provided in Attachment 1.

The conclusions reached in the original determination that the LAR contains No Significant Hazards Considerations and the basis for the categorical exclusion from performing an Environmental/Impact Statement have not changed as a result of this request for additional information.

A001

Please contact Lee A. Hentz at 704-875-4187 if additional questions arise regarding this license amendment request.

Sincerely,

Gary R. Peterson

Attachment

cc: w/attachment

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OATH AND AFFIRMATION

Gary R. Peterson affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

Gary R. Peterson, Site Vice President

Subscribed and sworn to me: 5/24/07

Date

Notary Public

My commission expires: June 18, 2008

Date

ATTACHMENT 1

Additional Information for the Office of Nuclear Reactor Regulation, Division of Safety Systems, Containment and Ventilation Branch regarding the Technical Specification 3.6.3 License Amendment Request submitted by McGuire.

Question 1

The licensee submits that ...

"The containment purge isolation valves at McGuire were determined to be unreliable with regard to maintaining leak tightness after cycling several years ago. Because of this, a license amendment request was submitted and approved exempting these valves from quarterly testing contingent upon administratively maintaining these valves closed. Leak rate testing per SR 3.6.3.6 is performed near the end of each refueling outage when the valves are sealed closed."

Maintaining the purge and exhaust valves closed during operation in Modes 1 through 4 eliminates valve cycling as a cause of unreliability. Please discuss why environmental effects (e.g. temperature, radiation) do not contribute to valve unreliability.

Response

A similar question was asked by the NRC in 2002 during the review of McGuire's request to adopt 10 CFR 50 Appendix J, Option B leak rate testing as documented in Duke's response dated July 22, 2002.

In 1994, a modification was approved to upgrade the valve seats on the containment purge supply and exhaust (VP) valves with a softer ethylene propylene (EPDM) material. The new softer seats allow the valve disc to move further into the valve seat for improved sealing capability. As part of the modification evaluation, the EPDM material was evaluated for use in the maximum post accident radiation and temperature environmental conditions and was found to be acceptable. The material used in the new valve seat design is not much different from the original design except for material hardness. The original design had a durometer hardness of 70 while the new design has a durometer hardness of 40. The seats are qualified as QA Condition 1, since they are to perform a safety function, containment isolation and integrity.

Quarterly leak rate testing results for the VP valves over a ten year period were provided to the NRC in the July 22, 2002 RAI response letter. After valve seat

modification implementation, which took several operating cycles, the test data shows repetitive, successful leak rate results until the valves are cycled during a refueling outage. The VP valve seat modification and consistent leak rate test results were the basis for the NRC's approval for suspending online quarterly testing as documented in the McGuire Appendix J Option B NRC Safety Evaluation dated September 4, 2002. Therefore, environmental effects have not contributed to valve unreliability.

The July 31, 2006 License Amendment Request currently under review by the NRC simply aligns Technical Specification 3.6.3 with the previously approved testing and operating mode of McGuire's containment purge supply and exhaust valves.

Question 2

The licensee indicates that leak rate testing per SR 3.6.3.6 is performed near the end of each refueling outage after the containment purge isolation valves have been stroked off their sealed seats to support Mode 5 and 6 containment events. Since the LAR was approved exempting the containment purge isolation valves from quarterly testing, has the leak tightness of the valves been consistently demonstrated upon entering Modes 5 and 6 (from Mode 4)? More specifically, upon leaving the sealed (i.e., dormant) state of the valves, have the "as found" Type C leak rate test results consistently demonstrated effective leak tightness of the dormant valve?

Provide the NRC staff with a summary of the "as found" Type C leak rate testing results as compared to the administrative limit for the subject valves since the exemption was approved.

Response

McGuire is not performing as-found leak rate testing on the VP valves during refueling outages. McGuire is performing as left testing after the VP valves are sealed closed prior to entering Mode 4.

10 CFR 50 Appendix J Option B limits containment purge valve leak rate testing frequency to be extended to no more than 30 months as stated in Regulatory Guide 1.163.

In order to apply an Option B extended test frequency, acceptable results from two consecutive as-found tests must be documented as stated in NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance Based Option of 10 CFR 50 Appendix J," Section 10.2.3.2.

McGuire does not intend to extend the VP valve leak rate testing to the maximum extended interval of 30 months but test on the interval in accordance with McGuire's Containment Leakage Rate Testing Program which is every refueling outage. This is stated in McGuire's Appendix J Option B license amendment dated December 7, 2001 and the NRC's Safety Evaluation dated September 4, 2002.

By not applying extended testing frequency for the VP valves (per 10 CFR 50 Appendix J, Option B and Regulatory Guide 1.163), as-found testing is not required. The current testing frequency is aligned with the more prescriptive requirements of Appendix J Option A.

Quarterly leak rate testing results for the VP valves over a ten year period were provided to the NRC in the July 22, 2002 RAI response letter. After valve seat modification implementation, which took several operating cycles, the test data shows repetitive, successful leak rate results until the valves are cycled during a refueling outage. These test results are representative of as-found testing. The VP valve seat modification and consistent leak rate test results were the basis for the NRC's approval for suspending online quarterly testing as documented in the McGuire Appendix J Option B NRC Safety Evaluation dated September 4, 2002.

The July 31, 2006 License Amendment Request currently under review by the NRC simply aligns Technical Specification 3.6.3 with the previously approved testing and operating mode of McGuire's containment purge supply and exhaust valves.