NRR-PMDAPEm Resource

From: Thompson, Jon
Sent: Thursday, March 01, 2012 1:09 PM
To: Hart, Randy; Rudy, Lawrence J
Cc: Rezai, Ali; Lupold, Timothy; Salgado, Nancy
Subject: Request for Additional Information for Relief Request 11-CN-002 submitted September 13, 2011

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (CATAWBA 1 AND 2), REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING RELIEF REQUEST (RR) 11-CN-002, "PROPOSED ALTERNATIVE REQUEST NUMBER 11-CN-002 FOR THE THIRD TEN-YEAR INSERVICE INSPECTION INTERVAL" (TAC NOS. ME7182 THROUGH ME7187)

By letter dated September 13, 2011, Duke Energy Carolinas, LLC (the licensee), submitted the subject RR for Catawba 1 and 2. The U.S. Nuclear Regulatory Commission staff has reviewed the licensee's submittal and determined that an RAI is needed in order to complete our review. The enclosed document describes this RAI. A written response should be provided to the NRC staff for these RAI questions within 30 days in order to support our timely review of this request. Please inform me as soon as possible if you are unable to support this response timeframe.

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

Sincerely,

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

Docket Nos. 50-413 and 50-414

Enclosure:
As stated

OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR ADDITIONAL INFORMATION
RELIEF REQUEST 11-CN-002
PROPOSED ALTERNATIVE REQUEST NUMBER 11-CN-002 FOR THE THIRD TEN-YEAR INSERVICE INSPECTION INTERVAL
DUKE ENERGY CAROLINAS, LLC
CATAWBA NUCLEAR STATION, UNITS 1 AND 2
DOCKET NOS. 50-413 AND 50-414

By letter dated September 13, 2011, Duke Energy Carolina, LLC (the licensee) submitted Relief Request (RR) 11-CN-002, "Proposed Alternative Request Number 11-CN-002 for the Third Ten-Year Inservice Inspection Interval" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11264A028) to the U.S. Nuclear Regulatory Commission (NRC) for review and approval. In the subject RR, the licensee proposed alternative pressure testing for the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code) Class 1 piping and component segments connected to (or part of) the reactor coolant system (RCS) in lieu of requirements of the ASME Code, Section XI, pressure testing. The proposed alternative is requested for the remainder of the third 10-year in service inspection (ISI) interval of Catawba 1

(which commenced on June 29, 2005, and will end on July 14, 2014) and Catawba 2 (which commenced on October 15, 2005, and will end on August 19, 2016).

The NRC staff has reviewed the information provided by the licensee in RR 11-CN-002 and finds the following additional information is needed to complete its review.

1. RR 11-CN-002 documented that the design pressure for piping and components in Segments 1, 2, 3, 4, and 5 is 2500 psig, while the section titled "Proposed Alternative" states that a system leakage test will be performed at a pressure not less than 300 psig for Segments 1, 2, and 5 and not less than 42 psig for Segment 3. The NRC staff notes that the section titled "Bases for the Proposed Alternative" states, "The proposed system leakage test conducted at a pressure of at least 300 psig (Segments 1, 2 and 5) and at least 42 psig (Segment 3) is acceptable because leakage (if it were to occur) would still be detectable at this reduced pressure, although at a reduced rate."

   a. Provide the maximum pressure that the subject piping and piping components for Segments 1, 2, 3, 4, and 5 would experience during normal operating, stagnant, accident, and fault conditions.

   b. In light of the documented design pressure of 2500 psig for Segments 1, 2, 3, 4, and 5, and maximum pressures (identified in the response to RAI question 1a), provide justification for performing a system leakage test at such a reduced pressure to ensure the structural integrity of the system.

2. On pages 8 and 9 of the subject RR, several related industry RRs are cited. Discuss whether during the second (previous) 10-year ISI interval of Catawba 1 and 2, a RR for pressure testing requirements was submitted to the NRC staff for the same piping and piping components of Segments 1, 2, 3, 4, and 5.

3. Are there any welded connections in piping and components for Segments 1, 2, 3, 4, and 5? If the answer is yes, provide number and type (e.g., full penetration butt weld and fillet weld) of welds. Discuss any nondestructive examinations (NDEs) that were performed on the welded connections. Discuss any industry or plant-specific operating experience regarding potential degradation (e.g, fatigue, stress corrosion cracking, overloading, and corrosion) of welds in piping and components for the subject segments.

4. NRC Information Notice (IN) 2011-04, "Contaminants and Stagnant Conditions Affecting Stress Corrosion Cracking [SCC] in Stainless Steel Piping in Pressurized water Reactors," (ADAMS Accession No. ML103410363), discusses potential SCC in stainless steel piping. Discuss the potential for SCC in piping and piping components for Segments 1, 2, 3, 4, and 5.

5. ASME Code Case N-731, "Alternative Class 1 System Leakage Test Pressure Requirements," approved for use in Regulatory Guide (RG) 1.147, Rev. 16 (ADAMS Accession No. ML101800536), provides an acceptable alternative to existing provisions of the ASME Code, Section XI. Discuss whether piping and piping components for Segments 1, 2, 3, 4, and 5 for which relief is requested, meet the requirements of ASME Code Case N-731.

Enclosure

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