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U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: Duke Energy Corporation
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370
Relief Requests (RR) 04-MN-02, 04-MN-03 and 04-MN-04
Request for Additional Information

Reference: (1) Letter from Mr. G.R. Peterson of Duke Energy Corporation (Duke) to the NRC, dated August 9, 2004, and (2) Letter from Mr. J.J. Shea of the NRC to Duke, dated January 14, 2005.

This letter provides additional information that was requested by the NRC staff in reference 2 above. The NRC staff's requests for information and Duke's responses are stated in the following attachment.

Please direct questions pertaining to this request to Norman T. Simms of Regulatory Compliance at (704) 875-4685.

Sincerely,

G. R. Peterson

Attachment

A001

xc w/attachment:

Mr. W.D. Travers
U.S Nuclear Regulatory Commission, Region II
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23 T 85
Atlanta, Georgia 30303

Mr. J.J. Shea, McGuire Project Manager (addressee only)
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ATTACHMENT

Relief Requests No. 04-MN-02, -03 and -04 RAI

Duke Response to NRC Request for Additional Information (RAI)
McGuire Nuclear Station
Unit 1: Relief Request 04-MN-02
Unit 2: Relief Requests 04-MN-03 & 04-MN-04

The RAI contains three enumerated items. Each enumerated item consists of several parts, either questions or response requests that are not individually numbered. For clarification purposes, Duke Energy separated the specific parts within the enumerated items and assigned an alpha character to each.

Enumerated Item 1 has four parts that are all associated with relief request 04-MN-02. These parts and their corresponding answers, numbered 1a through 1d, are shown below.

Relief Request 04-MN-02

Question 1a: **Regarding 1RPV1-462C-SE, since this is an item identified in the Risk Informed In-service Inspection program, have other welds of the same material, similar environment, and similar risk category been considered as a substitute so that a 100 percent volumetric coverage can be achieved?**

Response 1a: In the risk-informed program, systems are evaluated by breaking them into segments of piping that have the same failure consequence; then those segments are evaluated for failure probability. In this case, reactor coolant system segment NC-89 contains eight welds; two on each of four separate upper head injection lines attached to the reactor vessel head. These lines no longer serve a purpose, being previously dismantled and abandoned in place by capping them just above the reactor vessel head. Each of the four lines has two welds. One of these welds is a dissimilar metal connection weld of the pipe remaining stub to the reactor vessel head and the other is a pipe-to-pipe cap weld.

Based on the results of the risk-informed evaluation, the program required an ultrasonic examination to be performed on one of the eight welds within the segment. Duke Energy chose to perform the exam on the more likely location for a problem to occur--the pipe-to-head dissimilar metal weld.

Since all four of these lines have the same geometric configuration, there would be no examination coverage gained by substituting another similar weld from within the piping segment. However, due to recent industry concerns with reactor vessel head penetration nozzle weld cracking, a decision was made to perform an elective ultrasonic inspection of the other three pipe-to-head dissimilar metal welds. No unacceptable indications were found in any of the examined welds.

Question 1b: In addition, was a surface examination performed on 1RPV1-462C-SE?

Response 1b: No. Likely failure mechanisms at this weld location, thermal fatigue or PWSCC, would cause a crack that initiates from the inside pipe surface; therefore, a surface examination would be of no value.

Question 1c: What was the coverage achieved?

Response 1c: None, since a surface examination was not performed.

Question 1d: What were the results from previous inspections?

Answer 1d: No unacceptable indications were found. During the second interval, the 1989 Section XI Code was the guiding document. All four of the RV Head to Upper Head Injection Tube Welds received a volumetric and surface examination. These welds were examined in February 1997 and found to be acceptable. The volumetric examination coverage was 89.13%, the surface examinations were performed and the coverage obtained was greater than 90%.

Enumerated Item 2 has one part associated with relief request 04-MN-04. This part and the corresponding answer is shown below.

Relief Request 04-MN-04

Question 2: For Component 2N12FW26-15 (Item C05.011.168) the Code requires both volumetric and surface examinations. The submittal implied that surface examinations have been completed. What was the coverage achieved?

Response 2: A surface examination was performed and the coverage obtained was greater than 90%; therefore, no relief was needed from code requirements for the surface examination. Duke Power invokes code case N-460, where greater than 90% coverage is considered equivalent to 100%. No unacceptable indications were found.

Enumerated Item 3 has two parts that are associated with each relief request: 04-MN-02, 04-MN-03 and 04-MN-04. These parts and their corresponding answers, numbered 3a and 3b for the associated relief request, are shown below.

Relief Request 04-MN-02

Question 3a: For all other components for which 100 percent volumetric can not be achieved (e.g. 2NCW-3673-1, 2NC2FW22-6), please state if surface examination has been performed, and the coverage achieved.

Response 3a: No. See answer 1b.

Question 3b: **Similarly, for components for which 100% surface can not be achieved (e.g. 1CCPUMP-1A), although not required by the Code, please state if volumetric examination has been considered as an alternative to supplement the coverage of the surface examination.**

Response 3b: No. The accessibility issue preventing performance of the surface examination on some portions of the leg welds would also prevent the performance of an ultrasonic examination there.

Relief Request 04-MN-03

Question 3a: **For all other components for which 100 percent volumetric can not be achieved (e.g. 2NCW-3673-1, 2NC2FW22-6), please state if surface examination has been performed, and the coverage achieved.**

Response 3a: Please reference a statement, usually the last, found in Basis for Relief paragraphs A and C and E-H of the relief request that mentions surface exam performance and indication results. A surface examination was performed and the coverage obtained was greater than 90%; therefore, no relief was needed from code requirements for the surface exam. Duke Power invokes code case N-460, where greater than 90% coverage is considered equivalent to 100%.

The Pressurizer Support Skirt to Lower Head, integral attachment weld (2PZR-SKIRT) is a unique case. Due to accessibility problems, Duke Power uses an alternative examination approved by relief request 00-001 to conduct a volumetric examination of Figure IWB-2500-13, area C-D, in lieu of the required surface examination. The surface examination of area A-B was performed per code and the coverage obtained was greater than 90%.

Question 3b: **Similarly, for components for which 100 percent surface can not be achieved (e.g. 1CCPUMP-1A), although not required by the Code, please state if volumetric examination has been considered as an alternative to supplement the coverage of the surface examination.**

Response 3b: No. For weld 2CCPUMP-2A-LEG, the accessibility issue preventing performance of the surface examination on some portions of the leg welds would also prevent the performance of an ultrasonic examination there.

Relief Request 04-MN-04

Question 3a: **For all other components for which 100 percent volumetric can not be achieved (e.g. 2NCW-3673-1, 2NC2FW22-6), please state if surface examination has been performed, and the coverage achieved.**

Response 3a: Please reference the last statement found in Basis for Relief Paragraphs A-D of the relief request that mentions surface exam performance and indication results. A surface examination was performed and the coverage obtained was greater than 90%; therefore, no relief was needed from code requirements for the surface exam. Duke Energy invokes code case N-460, where greater than 90% coverage is considered equivalent to 100%.

Question 3b: **Similarly, for components for which 100 percent surface can not be achieved (e.g. 1CCPUMP-1A), although not required by the Code, please state if volumetric examination has been considered as an alternative to supplement the coverage of the surface examination.**

Response 3b: This issue is not applicable to the four welds of this relief request since both volumetric and surface exams were performed according to code requirements.