



GARY R. PETERSON
Vice President
McGuire Nuclear Station

Duke Power
MG01VP / 12700 Hagers Ferry Road
Huntersville, NC 28078-9340

704 875 5333
704 875 4809 fax
grpeters@duke-energy.com

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U. S. Nuclear Regulatory Commission
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Subject: McGuire Nuclear Station, Unit 2
Docket No. 50-370
Relief Request (RR) 03-002
Request for Additional Information

Reference: (1) Letter from Mr. G.R. Peterson of Duke Energy Corporation (Duke) to the NRC, dated March 8, 2004 (Relief Request 03-002), and (2) Letter from Mr. J.J. Shea of the NRC to Duke, dated July 30, 2004.

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

A047

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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)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 0-8G1
11555 Rockville Pike
Rockville, MD 20852-2738

J.B. Brady
Senior NRC Resident Inspector
McGuire Nuclear Station

ATTACHMENT

Relief Request No. 003-02 RAI

**Responses to Nuclear Regulatory Commission's Request for
Additional Information, Letter dated July 30, 2004**

Question 1

The March 8, 2004, submittal states that the Selected Licensee Commitment (SLC) lists visual examination requirements that are compatible with the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code), Section XI, VT-3 requirements. Please describe the differences and provide the technical basis and justification for why the SLC requirements would be an acceptable alternative to the VT-3 requirements required by the ASME Code.

Response

IWF-5000 requires that examinations be performed using the VT-3 visual examination method described in IWA-2213. IWA-2213 reads as follows:

"VT-3 examinations are conducted to determine the general mechanical and structural condition of components and their supports by verifying parameters such as clearances, settings, and physical displacements; and to detect discontinuities and imperfections, such as loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, wear, or erosion. VT-3 includes examinations for conditions that could affect operability or functional adequacy of snubbers and constant load and spring supports."

The McGuire SLC states that:

"Visual inspections shall verify: (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) attachments to the foundation or supporting structure are secure."

McGuire Procedure PT/0/A/4200/006 is used to implement the SLC inspections and includes requirements that the following items be checked: loose or missing locking devices, missing spacers, paint or corrosion issues, connecting devices, visible damage, welds, loose jams nuts on extensions, leakage, orientation, fluid level.

The differences between the requirements of IWA-2213 and the SLC are primarily semantic in nature. The intent and scope of the two documents are essentially equal, although the code wording is more detailed than the SLC in listing specific items to be included. However, those items are intuitive to meeting the SLC requirements and are more specifically addressed in the implementing procedure, which closely parallels the code list. SLC examinations are performed using task qualified personnel who are specifically trained for the SLC examinations and familiar with snubber and component support operation and maintenance.

With the SLC and code requirements being comparable, it is preferable to utilize the SLC in order to maintain consistent programmatic and procedural control between Unit 1 and Unit 2. The same procedures and personnel are currently utilized for examinations in both units. Using different governing documents for the two units would require administrative changes resulting in new procedures and additional training. Even though the actual physical scope and examination results would not be affected, there would be an added burden to implement the change and administer two programs. In addition, the programmatic difference between the two units would result in a number of potential human error traps when work is alternated between the two units.

Question 2

Relief is requested from IWF-5300(c) which requires that integral and nonintegral attachments for snubbers, including lugs, bolting, pins, and clamps, shall be examined in accordance with the requirements of this subsection. Please discuss the examination requirements for integral and nonintegral attachments that are performed per the SLC. In addition please describe the differences and the technical basis and justification for why the SLC requirements would be an acceptable alternative to IWF-5300(c). Is relief requested from the VT-3 requirements only or from the requirement to examine attachments?

Response

As stated in the response to Question 1, attachments and connections are included in the SLC examinations. The SLC makes no distinction between integral and non-integral attachments. All are included in the examination to verify overall structural integrity. The request is not intended

to exclude attachments from examination requirements, but only to use the SLC as the governing document for all examinations as stated in response to Question 1.

Question 3

10 CFR 50.55a(b)(3)(v) states, in part, that the licensees may use Subsection ISTD, in place of the requirements for snubbers in ASME Code Section XI, IWF-5200(a) and (b) and IWF-5300(a) and (b), by making appropriate changes to their technical specifications or licensee controlled documents. Preservice and inservice examinations must be performed using the VT-3 visual examination method described in IWA-2213. ISTD incorporates the reduced visual examination frequency table as provided in NRC Generic Letter 90-09. Please discuss why ISTD can not be implemented to perform examination/testing of snubbers.

Response

ISTD has indeed incorporated many improvements with regard to snubber examination and testing programs. However, there are some aspects of the ISTD requirements that are not conservative when compared to the current SLC program. There are also some ambiguities in ISTD that could potentially lead to unconservative decision making, especially with regard to infrequently encountered situations. It is felt that the current SLC requirements provide for a more comprehensive and conservative program than would result from incorporating the current edition of ISTD. Some of the differences between the SLC and ISTD are as listed below:

- The SLC requires a 10% additional sample for each failure under the 10% Plan. ISTD-5300 requires only a 5% additional sample. The larger supplemental sample size increases the statistical reliability of the population.
- ISTD allows for isolated snubber failures to be accepted with no additional tests required, for both the 10% and the 37 Plans. The definition and use of the term "isolated failure" is ambiguous and subject to interpretation. Incorrect application of this allowance could invalidate the statistical basis of the testing and render the sample testing useless as a tool for determining the reliability of the snubber population. This is a human error trap for all but the most knowledgeable program owner, potentially

resulting in a false level of confidence in the population reliability.

- ISTD states that all unacceptable snubbers should be assigned to a Failure Mode Group (except for isolated or unexplained), no matter the quantity of failures involved. This can lead to "force fitting" a failure into a category prematurely, resulting in supplemental testing being restricted to a non-conservative subgroup of the overall snubber population. The SLC does not have specific allowances for Failure Mode Grouping. This results in a more conservative additional sample from the overall population, while the SLC remedial actions address common cause evaluation and generic applicability issues.
- There are inconsistencies in the ISTD wording for the 10% and 37 Plans with regard to Failure Mode Grouping that could be a human error trap for the implementing parties, and are potential areas for interpretation issues with regard to literal compliance decisions.
- In general, Failure Mode Grouping is not conservative for plants with large populations such as McGuire. The sample plans assume a homogenous population. Failure Mode Grouping makes it more critical for the remaining population to be homogenous in order for the statistical assumptions to remain valid. By encouraging Failure Mode Grouping, ISTD can lead to decision making that is not conservative in the long term.

Justification Summary

The McGuire SLC provides more comprehensive and conservative requirements which are more effective in providing a reliable component population. This results in an increased confidence in plant safety. The use of the SLC addresses the intent and scope of the requirements in both Section XI IWF-5000 and the 50.55a rulemaking in a single governing document that can be consistently applied to both units.