

MAY 07 1986

Docket Nos.: 50-369  
and 50-370

Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Request for Additional Information on Inservice Inspection  
Program - McGuire Nuclear Station, Units 1 and 2

The NRC staff is reviewing you letters of November 5 and 7, 1984 submitting the inservice inspection (ISI) program for the first ten-year inspection interval at McGuire Nuclear Station, Units 1 and 2. This review is being performed with the technical assistance of an NRC contractor, Science Applications, Inc. We find that additional information identified in the enclosure is needed for completion of this review.

Your response to the enclosure is requested within 45 days of this letter. Contact me if you have questions regarding the enclosure.

Sincerely,

*/s/*  
Darl Hood, Project Manager  
PWR Project Directorate #4  
Division of PWR Licensing-A

Enclosure: As stated

cc: See next page

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Mr. H. B. Tucker  
Duke Power Company

McGuire Nuclear Station

cc:

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION  
INSERVICE INSPECTION PROGRAM

McGuire Nuclear Station

By letter dated November 7, 1984,<sup>(2)</sup> from H. B. Tucker (Duke Power Co.) to H. R. Denton (NRC), you submitted a proposed inservice inspection (ISI) program for McGuire Nuclear Station, Units 1 and 2 first ten-year inspection interval. We will be evaluating these programs and using them with the documents referenced in them and other documents (see attached document review list) to review your ISI program and exemptions from examination. If there are any relief requests or supporting information you wish considered, please provide us with copies. If they have been previously furnished to the NRC, please document by reference.

However, any previous relief requests, regardless of being previously furnished to the NRC as a preservice inspection or preliminary inservice inspection relief request, must be resubmitted with the current inservice inspection program.

The following questions address the ISI program for both units except where specifically noted.

1. Additional plant detail is needed for adequate evaluation of inservice inspection program compliance with the requirements of ASME Section XI. The following is a list of such additional documents, drawings, and information. For each item, a brief reference to the applicable Code requirement is given.
  - (a) Provide color-coded flow diagrams identifying Class 1, 2, and 3 systems and the examination requirements on each portion of those systems, including pressure and hydrostatic test boundaries and test pressures. (These are contained, except pressure and hydrostatic test boundaries, in controlled copies of the ISI program but not in NRC review copies.)

- (b) Provide applicable piping and instrument diagrams and pump and vessel drawings showing ID numbers from the ISI program plan for welds, components, and component supports. Diagrams should also indicate which systems or vessels are examined when the similar multiple train concept is used. (IWB, IWC, and IWD allow weld examination based on minimum weld sampling size or similar multiple system design.)
- (c) Sections 4.1, 5.1, and 6.1 of Volume 1 of the ISI plan list Class 1, 2, and 3 components to be examined, by Code item number, in Tables IWB-2500-1, IWC-2500-1, and IWD-2500-1. These lists do not include all items defined in these tables. Provide a complete Section XI item number list with non-applicable item numbers clearly marked.
- (d) Volumes 2 and 3 list the detailed examination schedule for Units 1 and 2. The examination schedule is a computer listing of component examination by outage number. Section XI examinations are based on inspection periods, defined in Table IWB-2412-1, with certain percent of weld examinations to be performed in specific inspection periods. Provide a recompiled computer listing of examinations specifying the following information for each Section XI item number:
- (1) component description
  - (2) Section XI item number
  - (3) examination method
  - (4) first interval sample size (either total number of welds, length of weld or number of component supports, as applicable)
  - (5) number or length of welds or component supports to be examined in each of the three inspection periods.
  - (6) For Class 1 and 2 piping, also give the total number of welds. List the number of welds by item number, broken into the number of welds conforming to each of the applicable notes in the IWB and IWC tables. (Table IWB-2500-1, Examination Category B-J, bases sample size on notes 1a, 1b, 1c,

1d; Table IWC-2500-1, Examination Category C-F, allows sampling size criteria for piping welds based on notes 1a, 1b, 1d(3), 1d(4).)

- (e) List Class 2 systems required to operate or support safety system functions. (IWC-2500-1, Examinations Category C-H, Note 7)
  - (f) List Class 3 systems and their integral attachments which support reactor shutdown, ECC, containment heat removal, atmosphere clean-up, reactor residual heat removal, and residual heat removal from spent fuel storage pool. (IWC-2500-1 requires examination of these items and their integral attachments.)
2. The ISI program plan for units 1 and 2 is written to be in accordance with the 1980 Edition of ASME Section XI, including all addenda through Winter 1980. This edition is appropriate for Unit 2; however, Unit 1 operating license is dated July 8, 1981, which gives the Code of record as 1977 through Summer 1979. Approval must be requested per 10 CFR 50.55a(g)(4)(iv) to update the Unit 1 ISI program to the 1980 Edition of ASME Section XI, including all addenda through Winter 1980.
3. Complete determination of compliance with Section XI examination requirements and extent of components examined is not possible until information requested in Item 1 above is provided. However, the list below gives Unit 1 items or examinations currently omitted from the ISI plan. Any such requirements deemed impractical must be justified by requests for relief.
- (a) Steam generator nozzle-to-safe end butt welds (Examination Category B-F, Item number B5.10) are not to be surface examined (see comment section in Volume 2 of the ISI plan).
  - (b) No Class 1 integrally welded attachments on piping, pumps, or valves, are identified under the applicable category (Examination Category B-K-1, Item numbers B10.10, B10.20, and B10.30). However, a reactor coolant pump 1A support lug is mentioned under the augmented inspection of reactor coolant pump flywheel.

- (c) Class 1 pump casing internal surfaces (Examination Category B-L-2, Item number B12.20) are not to be examined.
- (d) Branch connections on safety injection loops 1, 2, 3, and 4 (Examination Category B-J, Item number B9.31) are to be volumetrically examined from the pipe side only.
- (e) Reactor vessel core support structure (Examination Category B-N-3, Item number B13.30) is not to be examined.
- (f) RHR System weld number IND 69A-3 (Examination Category C-F, note 1(a)) is not to be examined as required.
- (g) Snubber tests are not scheduled, as required by Paragraph IWF-5000.

4. Section XI requires meeting certain schedule requirements for performing examinations, with deferral of some component examinations allowable, as specified in the applicable tables. A complete evaluation of compliance with these requirements is not possible until information requested in Item 1(d) above is provided. However, with information currently available, the items listed below apparently now do not conform to the Code schedule requirements. Items that cannot meet schedule requirements will require relief requests.

- (a) Unit 1 reactor vessel shell-to-flange weld (Examination Category B-A, Item number B1.30) to be examined during Outages 1 and 6.
- (b) Unit 1 reactor vessel head-to-flange weld (Examination Category B-A, Item B1.40) to be examined during outages 1, 3, and 6.
- (c) Unit 1 pressurizer shell-to-head longitudinal and circumferential welds (Examination Category B-B, Item numbers B2.11 and B2.12) to be examined during Outages 2 and 6.
- (d) Unit 1 pressurizer pressure-retaining bolting, 2 inches and less in diameter (Examination Category B-G-2, Item number B7.20) to be examined during Outage 3.
- (e) Unit 1 reactor coolant pump seal gland bolting, 2 inches and less in diameter (Examination Category B-G-2, Item number B7.60) to be examined during Outage 2.
- (f) Unit 1 reactor vessel interior (Examination Category B-N-1, Item number B13.10) to be examined during Outages 1 and 6.

- (g) Class 1 systems leakage tests (Examination Category B-P) not to be performed during Outage 7.
5. Several augmented inspection commitments were made during plant licensing. Little review information on these augmented inspections, other than pump flywheel and pipe rupture protection examinations, has been provided. Background information and commitments should be submitted. This should include enough information to enable evaluation of the volumetric examination, defined as "best effort UT due to configuration," for augmented inspection of steam generator modification, safety injection system modifications, and thermal sleeve removal.
  6. The licensee's letter dated November 5, 1984, (1) changed the augmented inspection plan for pipe rupture protection. The previous commitment called for accumulator injection line with inspection at system pressure and temperature of 450 psig and 150°F. Reference 1 proposed to examine the subject welds while the system is depressurized. The current ISI program plan calls for inspection at 450 psig and 150°F. The licensee is requested to resolve this conflict. If the ISI program is changed to reflect the Reference 2 plan, relief must be requested from the previous commitment.
  7. Section 2.1.2 of the ISI program plan defines Class 2 exempted components as those systems with design pressure and temperature less than 275 psig and 200°F. However, IWC-1220 defines the exemptions as above but excludes Residual Heat Removal Systems and Emergency Core Cooling Systems from the exemption. The licensee should state if these Class 2 systems are included in the ISI program. Relief must be requested for any portions of these systems that cannot be examined.

References

1. H. B. Tucker (Duke Power Co.) to H. R. Denton (NRC), McGuire Units 1 and 2, November 5, 1984.
2. H. B. Tucker (Duke Power Co.) to H. R. Denton (NRC), McGuire Units 1 and 2, November 7, 1984.



## REVIEW DOCUMENT RECORD

Unit(s) W. B. McGuire Units 1 & 2

Date	ID number and Author - Recipient	Type	Subject Matter
2/1/79	Parker (Duke) to Denton (NRC)	Sub.	Unit 1 PSI Relief Request and Preliminary ISI Relief Request
2/9/79	Boyd (NRC) to Parker (Duke)	Ltr.	Augmented ISI for Pipe Rupture Protection
3/22/79	Parker (Duke) to Denton (NRC)	Ltr.	" " " " "
1/81		SER	NUREG-0422 Supp. 4 - Unit 1 ISI
7/13/82	Parker (Duke) to Denton (NRC)	Sub.	Thermal Sleeve Evaluation Report
11/24/82	Adensam (NRC) to Tucker (Duke)	Ltr.	Request of Outstanding Information
12/22/82	Tucker (Duke) to Denton (NRC)	Ltr.	Preliminary ISI and PSI Relief Requests
12/14/83	Tucker (Duke) to Denton (NRC)	Ltr.	Removal of Thermal Sleeves
1/11/83	Tucker (Duke) to Denton (NRC)	Ltr.	Unit 2 Hydro Testing Relief Request
1/19/83	Tucker (Duke) to Denton (NRC)	Ltr.	Unit 2 PSI Relief Request
2/83		SER	NUREG-0422 Supplement 6, Unit 2 ISI
11/5/84	Tucker (Duke) to Denton (NRC)	Ltr.	Augmented ISI for Accumulator Injection Line Welds
11/7/84	Tucker (Duke) to Denton and Adensam (NRC)	Sub.	ISI Plan: Volumes I, II, III (Rev. 6)
	McGuire FSAR Q-121-7 to Q121-13	Sub.	PSI and ISI Questions and Responses