

**DUKE POWER COMPANY**

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March 31, 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief  
Licensing Branch No. 4

Re: McGuire Nuclear Station, Units 1 and 2  
Docket Nos. 50-369 and 50-370  
IWP/IWV Pump and Valve Inservice Testing Programs

Dear Mr. Denton:

My letter of August 17, 1982 submitted Revision 3 of the McGuire Nuclear Station (Unit 1) pump and valve inservice testing program. EG&G Idaho, Inc., which has been performing a review of the McGuire Unit 1 program under contract to the NRC, generated a list of questions and comments concerning this resubmittal for which responses are required in order that they can complete the draft safety evaluation report for Unit 1. Please find attached (Attachment 1) this listing with Duke Power Company's responses.

Also, pursuant to 10 CFR 50.55a(g), enclosed for NRC staff use and review are ten copies of Revision 4 (dated March 31, 1983) to the Unit 1 program. This revision reflects the above mentioned responses as well as additional miscellaneous changes and corrections. Also incorporated into the revision are valves required to be tested by the addition of the Standby Shutdown Facility, and a redefining of cold shutdown testing to prevent a limited shutdown from incurring increased downtime for testing not otherwise required. Note that where responses to EG&G's questions and comments led to revisions in the program, the affected page(s) were indicated after our response.

Additionally, pursuant to 10 CFR 50.55a(g), enclosed for NRC staff use and review are 10 copies of the McGuire Nuclear Station Unit 2 pump and valve inservice testing program (original issue). Because of the similarities of the two units, the Unit 1 and 2 programs are essentially identical, although certain differences exist such as those associated with the deletion of the Boron Injection Tank System on Unit 2 and systems shared by both units being covered under the Unit 1 program only. This Unit 2 program reflects the results of EG&G's review of the Unit 1 program, including the questions and comments referred to above, and other aspects of Revision 4.

Note that the Unit 1 program has been reprinted in its entirety to facilitate its incorporation into a single multi-unit manual. Both units' programs (with enclosed

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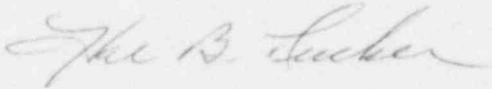
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separation tabs) should be inserted into your Unit 1 binder, removing the earlier version (Revision 3) Unit 1 program, and replacing the binder's inserts with the new "Unit 1 and 2" inserts (also enclosed).

Duke Power Company intends to implement the Unit 1 program as revised and the Unit 2 program on an interim basis pending approval by the NRC.

By copy of this letter, one copy of each of the above documents is also being provided to NRC-Region II.

Very truly yours,



Hal B. Tucker, Vice President  
Nuclear Production

PBN:jfw  
Attachment  
Enclosures

cc: (w/attachment-enclosures)  
Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street NW, Suite 2900  
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Mr. Herb Rockhold  
Idaho National Engineering Lab.  
EG&G, Inc.  
1520 Sawtelle Street  
Idaho Falls, Idaho 83401

Mr. W. T. Oders  
Senior Resident Inspector-NRC  
McGuire Nuclear Station

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bcc: (w/attachment-enclosures)  
W. M. Sample (MNS) (5) (CN's 14-18)  
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G. A. Copp (CN20)  
D. B. Blackmon (CN21)  
S. D. Alexander (CN22)  
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R. A. Johansen (CN24)  
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Mike Misenheimer (CN31)  
Licensing-PBN (CN's 32-35)  
Section File (CN29)  
Master File (CN30)

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M. D. McIntosh (MNS)  
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D. R. Bradshaw (MNS)  
J. E. Snyder  
Section File MC-802.01 (w/attachment 1 only)

Attachment 1

DUKE POWER COMPANY

RESPONSE TO EG&G IDAHO, INC.'s

QUESTIONS AND COMMENTS CONCERNING

THE MCGUIRE, UNIT 1, RESUBMITTAL DATED AUGUST 17, 1982

The following questions and comments are identified by the page number of the IST program and, in parentheses, the applicable item(s) of the working meeting minutes. The working meeting was held March 23, 24, & 25, 1982.

Page

- I.1-1 Do paragraphs I.A and I.B apply to all pumps in the IST  
(Pump Testing program?  
Item 1) DPC: No, they apply as stated in the paragraphs themselves  
(Pg. I.1-1).
- I.1-1 Should paragraphs I.A and I.B be combined?  
DPC: No, for the reasons stated in above response/revision.
- I.1-1 What are the two systems referenced in paragraph I.C?  
Attachment 1 identifies only one system.  
DPC: There is only one system--centrifugal charging pumps  
(Pg. I.1-1).
- I.1-2 Paragraph III.A, Alternate Testing, states the condition  
of the chilled water pumps will be determined using vibra-  
tion data only while the data sheet (Attachment 1) states  
all parameters except bearing temperature will be monitored.  
Should the relief request be clarified to include the in-  
formation from Attachment 1?  
DPC: Yes (Pg. I.1-2, I.1-4).
- I.1-3 How is flow rate of the Diesel Generator Room Sump Pumps  
verified?  
DPC: The time which it takes to pump a known volume from the  
sump is recorded and converted to a flow rate (Pg. I.1-3).
- I.1-4 NOTE 1 - Is vibration instrumentation accuracy + 20%?  
DPC: No, the portable instruments used to measure vibration  
have an uncertainty of  $\pm 11\%$ . Relief requested. (Pgs. I.1-1,  
I.1-4).
- II.4-1 When is corrective action taken concerning valves with  
stroke times of less than 5 seconds?  
DPC: Maintenance will be initiated if valve time exceeds  
maximum limit (Pg. II.4-1).
- II.5-2 Relief Request for valve 1VE-11 is unnecessary because  
leak testing is the only testing required by the Code for  
Category A/C Passive valves.  
DPC: Relief request for 1VE-11 will be deleted (Pg. II.5-2,  
II.5-3).

- II.6-5                    Should the coordinates for valve 1CA-86A be C-13?  
Should the coordinates for valve 1CA-116B be E-13?  
DPC: Yes, coordinates are C-13 and E-13 respectively  
(Pg. II.6-5).
- II.6-10 (C.9)            How are valves 1CA-165 and -166 verified operable?  
DPC: By disassembly (Pg. II.6-10).
- II.9-4                    Is valve 1NV-223 listed twice? Should the valve at  
coordinates E-10 be -233?  
DPC: Yes, second listing of valve 1NV-223 at coordinates  
E-10 should be valve 1NV-233 (Pg. II.9-4).
- II.9-6 (F.7)            Concerning valve 1NV-78, what are the consequences if  
pressurizer level control is lost?  
DPC: Could result in a plant shutdown (Pg. II.9-6).
- II.9-8                    Should "Alternate Testing" specify cold shutdown?  
DPC: Yes (Pg. II.9-8).
- II.9-9 (F.16)            Concerning valves 1NV-244A and -245B, what are the conse-  
quences if charging is lost?  
DPC: Could result in loss of pressurizer level control and could  
result in plant shutdown (Pg. II.9-9).
- II.9-10 (F.23)           Should valve 1NC-225 be 1NV-225? Why can't 1NV-225 and -231  
(F.18) be exercised during power operation and cold shutdown?  
DPC: See response "A" on last page.
- II.9-11 (F.18)           Should valve 1NC-223 be 1NV-223? Why can't this valve be  
(F.14) exercised during power operation? Why is it partial-stroke  
exercised during cold shutdown?  
DPC: See response "B" on last page.
- II.9-12 (F.17)           What operational problems are associated with exercising  
(F.14) 1NV-221A and -222B during power operation?  
DPC: See response "C" on last page.
- II.10-5                   Should 1KC-47 Test Alter. be RF instead of CS to agree with the  
relief request?  
DPC: Yes (Pg. II.10-5).
- II.10-12                  Why would failure of valves 1KC-332B and -333A while testing  
force unit shutdown?  
DPC: See response "D" on last page.
- II.10-13 (G.10)          Why would failure of valve 1KC-320A while testing force  
unit shutdown?  
DPC: It would isolate flow to the RCDT heat exchanger resulting  
in boiling of the water in the RCDT, causing overpressuri-  
zation of the RCDT (Pg. II.10-13).



- II.13-5 Are all valves listed operated only during cold shutdowns?  
What are the restrictions of Tech. Spec. 4.6.1.9?  
DPC: See response "E" on last page.
- II.14-2 Should INS-21 Test Alter. be RF instead of blank?  
DPC: Yes (Pg. II.14-2).
- II.14-3 Should INS-4, -13, and -16 Test Alter. be RF instead of blank?  
DPC: Yes (Pg. II.14-3).
- II.14-4 (J.2) How are valves INS-30, -33, -16, -13, -46 and -41 full-stroked during refueling outages?  
DPC: By disassembly (Pg. II.14-4).
- II.14-5 (J.4) How are valves INS-21 and -4 full-stroke exercised? According to the minutes, the closed position is NSR. The relief request does not address partial-stroke and the basis does not agree with the minutes.  
DPC: See response "F" on last page.
- II.15-2 Should valves Irv-32A, -33B, -77B, and -76A have relief request indicated?  
DPC: Yes (Pg. II.15-2).
- II.15-4 (K.1) Same valves as II.15-2. What are the consequences if cooling water is lost to containment?  
DPC: Would result in a steep rise in lower containment temperature which could exceed tech. spec. limits and cause a plant shutdown
- II.21-2 (T.2) Should valves ICF-137 have relief and CS indicated? (Pg. II.15-4).  
DPC: No, indication of relief and CS on page II.21-2 was inadvertent. Valve will be full stroked and timed quarterly (Pg. II.21-2).
- II.21-3 (T.2) Valves ICF-134, -135, and -136, same as -137 above, are continuation of question II.21-2. Minutes of the meeting state all four valves will be exercised quarterly.  
DPC: As above, indications were inadvertent. Valves will be full stroke exercised and stroke timed quarterly (Pg. II.21-3).
- II.21-4 Should valves ICF-151, -153, -155, and -157 indicate a relief request and be identified for CS testing? These valves were tested quarterly in the old program.  
DPC: Indication of relief and CS on page II.21-4 was inadvertent. Valves will be tested quarterly (Pg. II.21-4).
- II.21-8 (T.3) Provide a more detailed technical basis why valves ICF-126, -127, -128, and -129 cannot be full-stroke exercised during power operation.  
DPC: Cycling valve during power operation could induce unwanted transients in steam generators. It would result in an increase in flow to the main feedwater nozzles causing vibrations in the preheater section of the steam generators (Pg. II.21-8).

- II.23-2 Relief request column for valve 1NF-229 is blank.  
DPC: Should have a "X" indicating relief request (Pg. II.23-2).
- II.24-2 Should valves 1VI-124 and -149 be AC instead of A?  
DPC: Yes, valves are category AC (Pg. II.24-2).
- II.26-1 System title should be Main Steam.  
DPC: Yes, "stream" was a typo. (Pg. II.26-1)
- II.26-2 Should Test Alter. column be blank?  
DPC: No, the test alter. column for the valves on Page II.26-2 should have "CS" in accordance with the relief request (Pg. II.26-2).
- II.26-3 (Y.2) Does the Basis for Relief apply equally to all valves listed?  
Should the relief request be rewritten to reflect the meeting minutes?  
DPC: See response "G" on last page.
- II.30-2 Why is Category C valve 1NM-67 leak tested?  
DPC: Valve is Category AC, not C. (Pg. II.30-2).
- II.30-3 Why is Category C valve 1NM-68 leak tested?  
DPC: Valve is Category AC, not C (Pg. II.30-2).
- II.31-4 Should valve 1RN-63A listed be -63B?  
DPC: Yes, valve is 1RN-63B (Pg. II.31-4).
- II.31-5 Should valves 1RN-21A and -22A Test Alter. column indicate RF instead of CS?  
DPC: See response "H" on last page.
- II.31-6 Should valves 1RN-26B and -25B Test Alter. column indicate RF instead of CS?  
DPC: Same as above, (Pg. II.31-13).
- II.31-11 Should valve 1RN-253BA listed be -253A?  
DPC: Yes, Valve is 1RN-253A. (Pg. II.31-11).
- II.31-12 What equipment could be damaged while exercising Category B valves 1RN-63B and -64A?  
DPC: The positive displacement charging pump and the computer room air conditioning. (Pg. II.31-12).
- II.31-13 (AA.2) Do valves 1RN-21A, -22A, -25B, and -26B all serve the same strainer?  
DPC: No, they serve nuclear service water strainers 1A and 1B, not just 1A as was indicated on relief request (Pg. II.31-13).
- II.31-16 (AA.15) What equipment could be damaged while exercising Category B valve 1RN-42A?  
DPC: The positive displacement charging pump and the computer room air conditioning (Pg. II.31-16).



- II.32-2 Are the pressurizer PORVs exercised quarterly in accordance with Technical Specifications rather than Section XI requirements?  
DPC: Valves are tested in accordance with Tech. Specs. which require cycling of PORV every 18 months. Relief requested (Pg. II.32-2, II.32-5).
- II.33-2 (CC.2) Should valves 1FW-13, -4, and -11 be identified as passive?  
DPC: Valves should be categorized A passive and leak rate tested per Appendix J (Pg. II.33-2).
- II.33-3 (CC.4) Does valve 1FW-28 require a relief request?  
DPC: No. This valve will be full stroke exercised quarterly using the full flow test line to RWST.
- II.34-2 (DD.3) Do valves 1ND-8 and -23 require a relief request?  
(ref. CC.4) DPC: No. These valves will be full stroke exercised quarterly using the full flow test line to RWST.
- II.34-3 Should valves 1ND-70 and -71 Test. Alter. column be blank?  
DPC: No, test alternative column should indicate "RF" in accordance with relief requests (Pg. II.34-3, II.34-5, II.34-7).
- II.34-4 (DD.1) Is the 600# setpoint correct? The meeting minutes state 385#.  
DPC: The setpoint should be 385 psig. (Pg. II.34-4).
- II.34-5 (DD.4) Should valves 1ND-70 and -71 have separate relief requests?  
Existing relief request does not agree with meeting minutes.  
DPC: Valves should have separate relief requests. New relief requests conform to meeting minutes. (Pg. II.34-3, II.34-5, II.34-7).
- II.35-3 Should valve 1NI-27 listed be -21?  
DPC: Yes, valve is 1NI-21. (Pg. II.35-3).
- II.35-4 Should valve 1NI-48 Test Alter. column be blank?  
DPC: No, test alternative column should indicate "RF\*" in accordance with relief request. (Pg. II.35-4).
- II.35-5 Should valve 1NI-436 Test Alter. column indicate Appendix J testing? (RF\*)  
DPC: Yes, testing alternative should be RF\* (Pg. II.35-5).
- II.35-9 Should valve 1NI-166 listed be -160?  
DPC: Yes, valve is 1NI-160. (Pg. II.35-9).
- II.35-9 (EE.15) Should valve 1NI-153 be deleted from the program to agree with the meeting minutes?  
DPC: Yes, valve is non-safety related and therefore should be deleted (Pg. II.35-9).
- II.35-10 (EE.21) Should valve 1NI-166 listed be -176? Should valves 1NI-175 and -176 have relief requests supplied?  
DPC: See response "I" on last page.
- II.35-13 (EE.28) Should UHI Rupture Disc have relief request indicated?  
DPC: No, relief indication was inadvertent. The UHI rupture disc will be tested per Tech. Specs., no relief required (Pg. II.35-13).

- II.35-18 (EE.6) Should two relief requests be written because the flow path is not identical for all four valves? Existing relief request does not agree with meeting minutes and is not as complete.  
DPC: Two relief requests are necessary because of differing flow paths, and were written to conform to meeting minutes. (Pg. II. 35-5, II.35-18, II.35-20).
- II.35-20 (EE.6) Should two relief requests be written because the flow path is not identical for all four valves? Existing relief request does not agree with meeting minutes and is not as complete.  
DPC: Same as above (Pg. II.35-5, II.35-18, II.35-20).
- II.35-21 (EE.10) Why can't the SI pumps be operated during power operation or cold shutdown?  
DPC: See response "J" on last page.
- II.35-22 (EE.11) Does failure while testing render SI inoperable? What are the consequences if suction from the FWST is isolated to the SI pumps?  
DPC: See response "K" on last page.
- II.35-23 (EE.11) What are the consequences of not having a flow path?  
DPC: Would result in damage to the SI pumps. (Pg. II.35-23).
- II.35-24 (EE.13) Provide a more detailed technical basis why valves INI-116 and -148 cannot be exercised during power operation and cold shutdown.  
DPC: See response "L" on last page.
- II.35-25 (EE.16) Provide a more detailed technical basis why valves INI-128, (EE.13) -159, -160, -156, -124, and -157 cannot be exercised during power operation and cold shutdown? DPC: Same as above (Pg. II.35-25).
- II.35-26 (EE.16) Are valves INI-129, -125, -134, and -126 full-stroke exercised during cold shutdowns?  
DPC: Yes, (Pg. II.35-26).
- II.35-28 (EE.21) Why can't the SI pumps be run during power operation or cold shutdown?  
DPC: See response "M" on last page.
- II.35-30 (EE.23) Why can't valves INI-184 and -185 be exercised during cold shutdown?  
DPC: Valves can't be tested without rendering both trains of RHR inoperable, and during cold shutdowns the RHR pumps are required for decay heat removal. (Pg. II.35-30).

II.35-31 (EE.27) Why can't valves INI-243, -249, -250, -251, -252 and -253

be exercised during cold shutdown?

DPC: At cold shutdown, the high velocity water could cause damage to reactor internals. This also could cause low temperature overpressurization. (Pg. II.35-31).

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Duke Power Company Responses (Cont.)

- A. INC-225 should be INV-225. Valves cannot be full or partial stroke exercised during power operation or cold shutdown because shutting these valves would isolate the normal charging suction and the alternate suction paths would result in increasing the RCS boron inventory and could result in plant shutdown. Full stroke exercising during cold shutdown could result in a low temperature overpressurization of the RCS. (Pg. II.9-10).
- B. INC-223 should be INV-223. Valve cannot be full or partial stroke exercised during power operation since shutting the valve would isolate the normal charging suction and the alternate suction paths would result in increasing the RCS boron inventory and could result in plant shutdown. Valve cannot be full stroke exercised during cold shutdown since this could result in a low temperature overpressurization of the RCS (Pg. II.9-11).
- C. Shutting these valves would isolate the normal charging suction and the alternate suction paths would result in increasing the RCS boron inventory and could result in a plant shutdown. (Pg. II.9-12).
- D. It would inhibit the flow path through the RCDT heat exchanger, and since no alternate flow path is available steam would be released to the RCDT which would become overpressurized. (Pg. II.10-12).
- E. Technical Specification 3/4.6.1.9 restricts opening of valves 1VP-1, 1VP-2, 1VP-3, and 1VP-4 at power to less than or equal to 90 hours per 365 days. The rest of the VP valves may not be opened at all during power operation (Pg. II.13-5).
- F. Valves are full stroke exercised by disassembly, and will be partial stroked quarterly. Basis for relief is that full stroke exercising with flow would require spraying the reactor building. (Pg. II.14-5).
- G. Valves 1SM-1,3,5, and 7, main steam isolation valves, will be partial stroke exercised quarterly. These valves cannot be full stroke exercised during power operation since shutting an MSIV could result in plant shutdown. Tech. Spec. requirements do not permit plant operation with a steam generator isolated. The MSIV bypass valves, 1SM-9,10,11 and 12, will be full stroke exercised quarterly. However, these valves cannot be stroke timed at this frequency since this operation will be utilizing the hand controller. These valves will be stroke timed during cold shutdowns. The relief request has been rewritten (Pg. II.26-3).
- H. No, it has been determined that these valves can be timed at cold shutdowns instead of during ESF testing at refueling. The relief request has been revised accordingly. (Pg. II.31-13).
- I. Valve listing should be INI-176. Valves INI-175 and INI-176 should have relief requests since they cannot be full or partial stroke exercised during power operation because the RHR pumps cannot overcome RCS pressure to open these check valves. These valves will be full stroke exercised during cold shutdowns. (Pg. II.35-10, II.35-29).
- J. Valve cannot be full stroke exercised during power operation since the only full flow flowpath is into the RCS and the SI pumps cannot overcome RCS pressure. During cold shutdown this valve cannot be full stroke exercised since this could result in a low temperature overpressurization of the RCS. (Pg. II.35-21).

Duke Power Company Responses (Cont.)

- K. Failure of valve in closed position would isolate suction from FWST to both safety injection pumps. This would render both trains of SI inoperable. (Pg. II.35-22).
- L. Valves cannot be full or partial stroke exercised during power operation since the safety injection pumps cannot discharge into the RCS at operating pressure. During cold shutdown these valves cannot be full or partial stroke exercised since the SI pumps are required by Tech. Specs. to be deenergized to prevent a low temperature overpressurization. (Pg. II.35-24).
- M. Valves cannot be full or partial stroke exercised during power operation since the SI pumps cannot overcome RCS pressure to permit flow through these valves. During cold shutdown exercising these valves could result in a low temperature overpressurization of the RCS. (Pg. II.35-28).