

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION OF THE SECOND TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

NORTHERN STATES POWER COMPANY MONTICELLO NUCLEAR GENERATING PLANT DOCKET NUMBER 50-263

1.0 INTRODUCTION

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Technical Specification 4.15.A for the Monticello Nuclear Generating Plant states that the surveillance requirements for Inservice Inspection and Testing of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, 2, and 3 components shall be applicable as follows: Inservice Inspection of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i).

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the second ten-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date twelve months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed therein. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for his facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed. The Commission may also authorize alternatives to the ASME Code, pursuant to 10 CFR 50.55a(a)(3) where it determines the alternative will provide an acceptable level of quality and safety.

The licensee, Northern States Power Company, has prepared the Monticello Nuclear Generating Plant Second Ten-Year Interval Inservice Inspection (ISI) Program, through Revision 10, to meet the requirements of the 1977 Edition, Summer 1978 Addenda of Section XI of the ASME Boiler and Pressure Vessel Code, except that the extent of examination for Class 1 and Class 2 piping welds has been determined by the 1974 Edition, Summer 1975 Addenda as permitted and required by 10 CFR 50.55a(b). The staff, with technical assistance from its Contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the Second Ten-Year Interval Inservice Inspection Program, through Revision 10, additional information related to the Program, and the requests for relief from certain ASME Code requirements determined to be impractical for the Monticello Nuclear Generating Plant during the second inspection interval.

2.0 EVALUATION

The ISI Program has been evaluated for (a) application of the correct Section XI Code edition and addenda, (b) compliance with examination and test requirements of Section XI, (c) acceptability of the examination sample, (d) compliance with prior ISI commitments made by the licensee, (e) correctness of the application of system or component examination exclusion criteria, and (f) adequate information in support of requests for relief from impractical Section XI Code requirements. The staff has determined that the licensee's ISI Program Plan does not reflect compliance with the requirements listed above.

The following are examples of deficiencies in the ISI Program that make the ISI Program unacceptable:

- (a) The Class 2 piping in the Core Spray and Containment Spray Systems has been completely exempted from inservice volumetric examination during the second 10-year interval. These systems should not be completely exempted from inservice volumetric examination based on Section XI exclusion criteria contained in IWC-1220. For similar plants, the NRC staff has previously determined that a 7.5% augmented volumetric sample of the Class 2 welds constitutes an acceptable resolution. Therefore, the licensee must perform inservice volumetric examinations of a 7.5% sampling of Class 2 welds in these systems. It is especially important to volumetrically examine the welds of those portions of Class 2 piping that contain stagnant borated water (e.g., from the Containment Spray pumps to the first weld beyond the isolation valve inside containment) as these welds are prone to intergranular stress corrosion cracking (IGSCC).
- It cannot be confirmed that the weld selection is correct because the (b) ISI Program does not contain a listing of specific piping welds to be examined during the second 10-year interval. A listing of these welds and the associated isometric and/or component drawings were requested from the licensee in the NRC letter dated July 12, 1989 in order to determine if the correct welds have been selected for examination during the second 10-year interval. The Licensee did not provide the requested information. Although the Inspection Summary Reports referenced by the licensee list the welds that have been examined, the welds to be examined during the remainder of the inspection interval are not provided. It appears that the licensee is building the ISI Program as the interval progresses. The ISI Program must contain a complete listing of the welds to be examined during the entire inspection interval and isometric and/or component drawings showing the nonexempt welds. Because the ISI Program contains insufficient information and the licensee has not provided the information requested in the July 12, 1989 NRC letter, it cannot be determined if the weld selection has been implemented in accordance with the requirements of the Code and 10 CFR 50.55a(b).

(c) The Licensee has misinterpreted Paragraph IWC-1220(c) of Section XI of the Code. The piping that is less than $\overline{4}$ inches nominal pipe size is not exempt from hydrostatic testing and visual examinations. Although Subarticle IWC-1220 of the 1977 Edition, Summer 1978 Addenda of Section XI states that certain "components shall be exempted from the inservice examination requirements of IWC-2500", the intent of the Code is to exempt these certain components from only the volumetric and surface examination requirements of IWC-2500. Subarticle IWC-1220 was clarified in later Code editions and addenda to read that certain "components (or parts of components) are exempted from the volumetric and surface examination requirements of IWC-2500." Also, Note (4) of Table IWC-2500-1, Examination Category C-H states that "There are no exemptions or exclusions from these requirements except as specified in IWA-5214." Therefore, these lines are required to be hydrostatically tested and visually examined in accordance with the Code and the licensee must make the necessary corrections to the ISI Program.

The information provided by the licensee in support of the requests for relief from impractical requirements has been evaluated and the bases for granting relief from those requirements are documented in the attached INEL Technical Evaluation Report EGG-MS-8969. We concur with, and adopt, the findings and recommendations contained in the subject report. Table 1 presents a summary of the reliefs requested and the status of the requests as determined by the staff.

3.0 CONCLUSION

Pursuant to 10 CFR 50.55a(g)(6)(i) and 50.55a(a)(3)(i), the staff had determined that for certain components for which relief is requested, the code requirements are impractical or that alternative testing provides an acceptable level of quality or safety. For those components, relief will be granted. Such relief is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest, giving due consideration to the burden that could result if the requirements were imposed on the facility. Other components are subject to future development of improved inspection methods, or, the licensee has not provided sufficient information or has misinterpreted exemption criteria. Relief will be denied for the latter. Monticello Nuclear Generating Plant Page 1 of 4

TABLE 1.

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SUMMARY OF RELIEF REQUESTS

Relief Request <u>Number</u>	System or <u>Component</u>	Exam. <u>Cat.</u>	Item <u>No.</u>	Volume or Area to be Examined	Required Method	Licensee Proposed <u>Alternative</u>	Relief Request Status
15	Class 2 Piping		•	Exemption criteria	Paragraph IWC-1220 of 74S75 Code	Paragraph IWC-1220 of 77S78 Code	Granted
16	Reactor Pressure Vessel	B-A	B1.11 and B1.12	Circumferential shell welds VCBA-2 and VCBB-3 and longitudinal shell welds VLBA-1 and VLBA-2	Volumetric examination	Volumetric exam. of welds other than beltline region welds	Denied
18	Reactor Pressure Vessel	B-E	B4.12	External surfaces of the RPV closure head flange leakage sensors (nozzles N-13 and N-14)	VT-2 visual examination	None. Visually examined if insulation is removed	Granted
23	Class 1, 2, and 3 Component Supports	В-К-2 С-Е	BI1.10 C3.50	Insulated portions of Class 1, 2, and 3 piping component supports and restraints	VT-3 and/or VT-4 visual examinations	None. Insulation removed from supported component for	Granted
		D-A, D-B, and D-C	D1.2, D2.2, and D3.2			inspections whenever the connections and welds cannot be examined or an	
		•				detected as a result of loss of support capability or inadequate restraint	•

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TABLE 1

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SUMMARY OF RELIEF REQUESTS

Relief Request System or Exa <u>Number Component Ca</u> t		Exam. <u>Cat.</u>	ltem <u>No.</u>	Volume or Area to be Examined	Required Method	Licensee Proposed <u>Alternative</u>	Relief Request Status	
24	Class 1 Pump and Valve Bolting	B-G-1	B6.180, B6.190, B6.210, and B6.220	Flange bolts of recirculation pumps P-200A and P-200B; and recirculation valve bonnet bolting for valves M02-53A, M02-43A, M02-53B, and M02-43B	Volumetric exam. when in place and volumetric and surface exams. when removed in accordance with Article 5 of Section V	Volumetrically examined using the back reflection method correlated with as-built sketch of bolt or stud examined. Section XI used for evaluation criteria	Granted - Licensee should consider using ASME Code Case N-375-2	
30	Core Spray System			Class 2 Core Spray A&B discharge lines TW11-10"-GE and TW7-10"-GE from pumps P-208A and P-208B to check valves CS-9-1 and CS-9-2, respectively	Hydrostatic pressure test at 1.10 times system pressure	Hydrostatic test at 1.10 times design pressure of suction piping	Granted provided inservice test is performed	
31	Class 2 Piping			Class 2 head vent and leak test connections on Class 1 piping	Hydrostatic pressure test at 1.10 or 1.25 times system pressure, as applicable	Hydrostatic test per Class I requirements (IWB-5000)	Denied - additional information required and Licensee misinterpreted exemption criteria	

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SUMMARY OF RELIEF REQUESTS

Relief Request <u>Number</u>	System or <u>Component</u>	Exam. <u>Cat.</u>	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed <u>Alternative</u>	Relief Request Status
41	Class 1 Pumps	B-L-2	B12.20	Pump casing internal surfaces of recirculation pumps P-200A and P200B	VT-1 visual examination	Visual examination when pumps are disassembled for maintenance	Granted with conditions stated in <u>LFR</u>
42	Class 1 Valves	B-M-2	B12.40	Internal surfaces of recirculation valves M02-53A, M02-53B, M02-43A, and M02-43B	VT-1 visual examination	Visual examination when valves are disassembled for maintenance	Granted with conditions stated in TER
49	Emergency Service Water System			Buried portions of Class 3 ESW system piping (buried portions of lines SW13-4"-HF and SW25-4"-HF)	Change in flow test between the ends of buried components	Leakage test that determines feed rate of water required to maintain test pressure	Granted
51	Reactor Pressure Vessel	В-Н	B8.10	Stabilizer brackets	Volumetric or surface examination, as applicable	None. Inspect if brackets experience design loads	Granted

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TABLE 1

SUMMARY OF RELIEF REQUESTS

Relief Request <u>Number</u>	System or <u>Component</u>	Exam. I 	tem Vol <u>No. to</u>	ume or Area be Examined	Required <u>Method</u>	Licensee Proposed <u>Alternative</u>		Relief Request Status
67	Class 1 Piping	B-J B9	11 Inaccessi circumfer welds: <u>Weld No.</u> MSAJ-38 MSBJ-35 MSCJ-35 MSCJ-35 MSDJ-40 FWAJ-33 FWDJ-33 CSAJ-22 CSBJ-20 PSAJ-15	ble ential piping <u>Line No.</u> PS1-18"ED PS2-18"ED PS3-18"ED PS4-18"ED FW2B-14"ED FW2A-14"ED TW7-8"ED TW11-8"ED PS18-8"ED	Volumetric and surface examination	None		Granted with conditions stated in TER
	• • •	· · ·	CWAJ-20 RHAJ-28 RHBJ-30 RHCJ-31 RHDJ-25 RSAJ-16 CLAJ-7	REW3-4"ED REW10-18"ED TW20-16"DB TW30-16"DB TW36-4"ED PS17-3"ED PS15-3"EB				