



Northern States Power Company

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March 11, 1993

10 CFR Part 50
Section 50.73

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

ASME Section XI ISI Examinations
Performed with Incorrect Calibration Blocks

The Licensee Event Report for this occurrence is attached.

We have made the following new NRC commitments in this Report:

- (1) The examinations associated with incorrect calibration blocks will be evaluated and, if the evaluation demonstrates that the sensitivity is off by more than -2dB (Section V recalibration tolerance), the examinations will be repeated at the next refueling outage.
- (2) ISI NDE procedures, plans and administrative procedures will be revised to require verification of use of correct calibration blocks and to improve records maintenance.
- (3) Actual material used for the pressurizer spray nozzle is being determined. Based on the results of that determination, the resultant examination sensitivity will be determined. If the sensitivity is off by more than -2dB (Section V recalibration tolerance), the examination will be repeated at the next refueling outage. Drawing corrections will be made based on the result of this evaluation.
- (4) Corrective measures have been initiated to improve the maintenance and retrievability of the ISI Program records.
- (5) ISI personnel are continuing to review the ISI plan for any other deficiencies.
- (6) An independent audit of the ISI Program is planned for late 1993 to determine the effectiveness of the corrective actions taken.

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NORTHERN STATES POWER COMPANY

Please contact Jack Leveille (612-388-1121, Ext. 4662) if you require additional information related to this event.

Jack Leveille for

Thomas M Parker
Director of Licensing
Nuclear Generation

c: Regional Administrator - Region III, NRC
NRR Project Manager, NRC
Senior Resident Inspector, NRC
Kris Sanda, State of Minnesota

Attachment

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Prairie Island Nuclear Generating Plant Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 8 2				PAGE (3) 1 OF 0 5		
TITLE (4) ASME Section XI ISI Examinations Performed with Incorrect Calibration Blocks																
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)						
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)			
0 2	0 9	9 3	9 3	0 0 4	0 0	0 3	1 1	9 3	Prairie Island Unit 2				0 5 0 0 0 3 0 6			
														0 5 0 0 0		
OPER. VG MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)														
N		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)		
POWER LEVEL (10)		20.405(e)(1)(iii)				50.36(c)(1)				50.73(a)(2)(iv)				73.71(c)		
1 0 0		20.405(e)(1)(iv)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
		20.405(e)(1)(vi)				XX 50.73(a)(2)(i)				50.73(a)(2)(viii)(A)						
		20.405(e)(1)(v)				50.73(a)(2)(v)				50.73(a)(2)(viii)(B)						
		20.405(e)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)						
LICENSEE CONTACT FOR THIS LER (12)																
NAME Arne A Hunstad										TELEPHONE NUMBER						
										AREA CODE						
										6 1 2 3		8 8 - 1 1 2 1				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE:)												XX NO				

ABSTRACT (Limit to 3400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

During the Fall 1992 Prairie Island Dual Unit Outage, with the plant in cold shutdown, the Authorized Nuclear Inspector noted that calibration block information was missing from the ASME Section XI ISI outage plan. Subsequent investigation showed that a number of ISI ultrasonic examinations had been performed with incorrect calibration blocks. All of the associated examinations will be evaluated for sensitivity and for coverage of required volume. Those examinations with unacceptable sensitivity or with less than required coverage will be repeated during the next refueling outage for each unit. The ISI plan will be revised to reflect correct calibration block information. ISI NDE procedures will be revised to assure that an acceptable calibration block is used and to assure that adequate examination coverage is achieved.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
Prairie Island Unit 1		05000 282		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
				93	004	00	

TEXT (If more space is required, use additional copies of NRC Form 365A) (17)

EVENT DESCRIPTION

ASME Sections XI and V contain requirements for ultrasonic examination of certain required volumes of welds using specified ultrasonic calibration blocks. The calibration blocks are required to be of similar material and thickness as the item being examined. Similarity is defined by the code.

During the Fall 1992 outage, the Authorized Nuclear Inspector noted that calibration block information had not been entered in the ISI outage plan for some components. The format for the outage plan had recently been revised to take advantage of information in a newly created database. The database is still being prepared and not all of the entries were complete. It was agreed with the Authorized Nuclear Inspector that discrepant and missing information from the outage plan would be resolved and the resolution provided to him.

Therefore, an investigation was initiated which revealed that incorrect thickness calibration blocks had been used to perform examinations on certain systems, as follows:

Pressurizer Nozzle to Safe End Welds, both units, a total of six weld examinations.

Reactor Coolant Main Loop Piping, Unit 1, 27.5" and 31" piping for a total of eight examinations.

Reactor Coolant Main Loop Piping, Unit 2, 27.5", 29" and 31" piping for a total of ten weld examinations.

Main Steam Piping, Unit 1, one 32" weld examination.

Steam Generator Shell Welds, both units, a total of five weld examinations.

In addition, a calibration block of the wrong material was used for examination of the pressurizer spray nozzle inner radius on both units. The wrong material was used for the calibration block because of an inaccurate drawing.

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TEXT (If more space is required, use additional copies of NRC Form 365A) (17)

During the review of examination results for Unit 2 main coolant loop piping, it was noted that examination results for six welds could not be located. The examination reports were referenced in the 1986 Unit 2 summary report. No copies of the reports could be located in the microfilm or in the hard copy reports retained for that outage. A portion of the examination information was recovered from a computerized database. This information indicates that there were some geometric indications and grain noise associated with these examinations but no relevant indications. This information leads us to conclude that the examinations were performed but that the records are missing.

CAUSE OF THE EVENT

The primary cause of the event is personnel error. Information from the first interval ISI plan was incorporated in the second interval plan without an adequate review of changes in the ASME code used for the second interval plan.

A secondary cause of the event was inadequate examination procedures. If the ultrasonic examination procedures had included a requirement to perform a thickness survey to set up angle beam shear wave examinations and if the ultrasonic examination procedures had included a requirement to construct beam plots for the examinations, then the dimensional problems with the calibration blocks should have been detected.

The calibration block material problem was caused by ambiguous as built information available to the ISI personnel.

The records problem was caused by the cumbersome way in which the ISI Program records are maintained.

ANALYSIS OF THE EVENT

An engineering evaluation was performed to study the safety of continued operation until the examinations could be evaluated and if necessary completed. This evaluation concluded that there was little or no risk to safe operation until the next refueling outage. This conclusion was based on the following:

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1. Section XI examinations are performed on a sample basis. Weaknesses in these examinations will be compensated for by other Section XI examinations.
2. There are no known unresolved degradation issues for the items examined.
3. There are no generic failure mechanisms associated with these welds. Therefore, independent of the validity of these examinations, there is no reason to believe that there are any harmful conditions associated with these welds.
4. The examinations, as performed, would have detected any harmful conditions in the reactor coolant main loop piping welds, main steam piping welds, and steam generator shell welds, and probably would have detected any harmful conditions in the pressurizer nozzle to safe end welds.

Therefore, the health and safety of the public are unaffected by this event. This event is reportable pursuant to 10 CFR Part 50, Section 50.73(a)(2)(i)(B).

CORRECTIVE ACTION

The examinations associated with incorrect calibration blocks will be evaluated and, if the evaluation demonstrates that the sensitivity is off by more than -2dB (Section V recalibration tolerance), the examinations will be repeated at the next refueling outage.

ISI NDE procedures, plans and administrative procedures will be revised to require verification of use of correct calibration blocks and to improve records maintenance.

Actual material used for the pressurizer spray nozzle is being determined. Based on the results of that determination, the resultant examination sensitivity will be determined. If the sensitivity is off by more than -2dB (Section V recalibration tolerance), the examination will be repeated at the next refueling outage. Drawing corrections will be made based on the result of this evaluation.

Corrective measures have been initiated to improve the maintenance and retrievability of the ISI Program records.

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ISI personnel are continuing to review the ISI plan for any other deficiencies.

A meeting was held between plant management and ISI management personnel in January 1993 to discuss recently identified deficiencies in the ISI Program at Prairie Island and the corrective actions needed to resolve the problems. The corrective actions discussed during and as a result of that meeting are:

The recent reassignment of personnel to an ISI team has taken place to more adequately coordinate the ISI program.

The recent hiring of an additional person to be devoted to program development.

The recent hiring of a person with designated responsibilities for document and records control.

An independent audit of the ISI Program is planned for late 1993 to determine the effectiveness of the corrective actions taken.

In addition, plant management is monitoring the progress of the ISI Program improvement efforts.

FAILED COMPONENT IDENTIFICATION

None.

PREVIOUS SIMILAR EVENTS

Deficiencies in the ASME Section XI Program have been reported as Unit 1 LERs 80-024, 90-018, and 92-011, and Unit 2 LER 91-001.