ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9008280179 DOC.DATE: 90/08/18 NOTARIZED: NO DOCKET #
FACIL:50-263 Monticello Nuclear Generating Plant, Northern States 05000263
AUTH.NAME AUTHOR AFFILIATION
OLSON,G.J. Northern States Power Co.
PARKER,T.M. Northern States Power Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-009-00:on 900719,inoperable fire barrier penetration seal due to non-compliance w/approved plant procedures.
W/9 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:NRR/LONG,W. 05000263

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD3-1 LA	1	1	PD3-1 PD	1	1
	LONG,B.	1	1			
INTERNAL:	ACNW	2	2	AEOD/DOA	1	1
	AEOD/DSP/TPAB	1	1	AEOD/ROAB/DSP	2	2
	NRR/DET/ECMB 9H	1	1	NRR/DET/EMEB9H3	1	1
	NRR/DLPQ/LHFB11	1	1	NRR/DLPQ/LPEB10	1	1
	NRR/DOEA/OEAB11	1	1	NRR/DREP/PRPB11	2	2
	NRR/DST/SELB 8D	1	1	NRR/DST/SICB 7E	1	1
	NRR/DST/SPLB8D1	1	1	NRR/DST/SRXB 8E	1	1
	REG FILE 02	1	1	RES/DSIR/EIB	1	1
	RGN3 FILE 01	1	1			
EXTERNAL:	EG&G BRYCE,J.H	3	3	L ST LOBBY WARD	1	1
	LPDR	1	1	NRC PDR	1	1
	NSIC MAYS,G	1	1	NSIC MURPHY,G.A	1	1
	NUDOCS FULL TXT	1	1			

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
TOTAL NUMBER OF COPIES REQUIRED: LTTR 32 ENCL 32

A0-4

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401-1927
Telephone (612) 330-5500

August 20, 1990

Report Required by:
10 CFR Part 50
Section 50.73

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

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Inoperable Fire Barrier Penetration Seal
Due to Non-Compliance With Approved Plant Procedures.

The Licensee Event Report for this occurrence is attached.

Please contact us if you require additional information related to this event.

Monica M Nik
for Thomas M Parker
Manager
Nuclear Support Services

c: Regional Administrator - III, NRC
Sr Resident Inspector
NRR Project Manager, NRC
MPCA
Attn: Dr J W Ferman

Attachment

IE22
1/1

NRC FORM 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

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-530), 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)	DOCKET NUMBER (2)	PAGE (3)
MONTICELLO NUCLEAR GENERATING PLANT	0 5 0 0 0 2 6 3	1 OF 0 5

TITLE (4)

Inoperable Fire Barrier Penetration Seal Due to Non-Compliance With Approved Plant Procedures

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 5 0 0 0
0 7	1 9	9 0	9 0	0 0 9	0 0	0 8	1 8	9 0		0 5 0 0 0

OPERATING MODE (9)		POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		1 0 0	20.402(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
			20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
			20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
			20.406(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
			20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
			20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Gregory J Olson, Engineer II	6 1 2 2 9 5 - 1 3 7 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	XX NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On July 19, 1990 with the plant operating at 100% power an unsealed penetration between two fire areas was discovered by an operator during normal rounds. This is a condition which is contrary to the requirements of Technical Specification 3.13.G.

It is believed that due to a cognitive personnel error, the penetration was opened and not re-sealed. This was not in compliance with approved plant procedures.

Corrective actions included sealing of the penetration and development of several long term corrective actions to change the overall approach to penetration seal inventory and control at Monticello. The corrective actions to prevent recurrence involve technical staff training on the event, revision of inspection and control procedures, and initiating a project to identify and catalog all penetrations based on field verifications.

DESCRIPTION

On the afternoon of July 19, 1990, with the plant operating at 100% of rated power, a plant operator identified an open fire barrier penetration (EIIS Code : PEN) seal (EIIS Code : SEAL) between Fire Area IX, Zone 16 and Fire Area X, Zone 12C. The operator discovered the open four inch conduit penetration during his normal rounds when he heard air flowing through the penetration. The operator immediately notified the Shift Supervisor.

The Shift Supervisor consulted the Fire Protection System Engineer, who determined that the penetration was in a fire area boundary and was required to be operable by Technical Specifications. The Shift Supervisor immediately implemented the fire watch patrol requirements of Technical Specification 3.13.G., which states that penetration seals in fire area boundaries shall be operable whenever safe shutdown equipment in that area is required to be operable.

Inspection by the Fire Protection System Engineer revealed that there was no seal material in the penetration on the Tube Pull Structure side (Fire Area IX). Because of the geometry of the penetration, it was necessary to enter the Condenser Room (Fire Area X) to evaluate the condition of the penetration on the opposite side of the barrier. This inspection revealed that no seal material was present in the other side of the penetration either. The penetration was sealed on July 23, 1990 and the fire watch patrol was terminated.

CAUSE

The most likely root cause of this event is cognitive personnel error due to non-compliance with plant policy and procedures. When the plant is shutdown the fire barrier wall is not required to be operable. During the outage of late 1989, the Fire Protection System Engineer gave permission to construction crews to remove two large concrete block sections of the wall (100-200 square feet each) to facilitate replacement of feedwater heaters. It is believed that the penetration in question was also opened during the outage since there were significant construction and maintenance activities in the Condenser Room requiring routing of hoses, cables, etc. through the fire barrier wall openings. Approved plant procedures call for the permission of the Fire Protection System Engineer prior to the opening of fire barrier penetrations. This permission was not granted for the penetration in question. The opening of the penetration may have been done under the assumption that the approval to open the wall encompassed all types of openings in that wall and that the normal plant procedure for opening penetrations was not required.

Subsequently, re-sealing of the penetration may have been overlooked since no procedure was governing the restoration of the penetration.

This is considered the most likely cause since the wall was inspected in response to a previous event (LER 89-013-01) just before the beginning of the outage. This inspection of all fire area boundaries, independent of normal plant surveillance procedures, was performed between June 30 and August 21, 1989. The wall in question was inspected at that time and no open penetrations were noted.

A contributing cause of this event may have been a procedure deficiency. Procedure 0275-1, Fire Barrier Fire Seal Visual Inspection, was performed on October 16, 1989 and should have revealed the open penetration if it were open at that time. The penetration in question is not specifically identified in the procedure. However, general instructions are given in the procedure to inspect and report any unidentified seals on the wall being inspected.

Since it cannot be explicitly verified that the penetration was opened during the outage and since it was not identified on procedure 0275-1, the possibility that the penetration was not identified during the original plant Appendix R Barrier Review was addressed. This is considered unlikely since the inspection done between June 30, 1989 and August 21, 1989 did not reveal any open penetrations on this wall. This inspection was very thorough and was independent of normal plant surveillance procedures to ensure any potential deficiencies in those procedures did not affect the effectiveness of the inspection. The penetration is not in an unusual location and is fairly accessible, making it highly unlikely that it would have been missed during the inspection.

ANALYSIS

Per the Plant Appendix R analysis, a fire in Fire Area IX, Zone 16 power cables could result in the loss of the Division I Emergency Diesel Generator (EIIS System Codes : EK,DG). This fire scenario, concurrent with a loss of offsite power, could result in the loss of all Division I Safe Shutdown Systems. A fire in Fire Area X, Zone 12C could result in the loss of Division II Suppression Pool Temperature Monitoring. The critical result is that a fire involving both Fire Areas, concurrent with loss of offsite power, could result in the loss of both Division I and Division II Suppression Pool Temperature Monitoring systems. All other Division II Safe Shutdown Systems would be available under this worst case analysis.

Although Division I and Division II Suppression Pool Temperature Monitoring systems are assumed lost, Division I Suppression Pool Temperature Monitoring would be available for 4 hours since the system has a backup battery power supply. After 4 hours, Suppression Pool temperature could be monitored by manual means or through use of Residual Heat Removal system heat exchanger inlet temperature indication while in Suppression Pool Cooling mode. Therefore, Suppression Pool temperature information could be obtained if required, to allow personnel to make appropriate decisions, to bring the plant to a safe shutdown condition.

Propagation of a fire between these two Fire Areas is considered unlikely due to several mitigating features of the plant fire protection program. Fire Area IX, Zone 16 is equipped with local smoke detectors (EIIS Code : DET) that alarm locally and in the Main Control Room. This would ensure prompt fire brigade response and fire suppression would most likely occur before a fire propagated into the adjacent Fire Area through the four inch opening. Fire Area X, Zone 12C is equipped with a wet pipe sprinkler system (EIIS Code : KP,SRNK) which reduces the chance of a fire growing large enough to propagate into the adjacent Fire Area. The Suppression Pool Temperature Monitoring cables in Fire Area X are located greater than 60 feet from the penetration. If a fire propagated from Fire Area IX to Fire Area X, it is unlikely that a fire would involve the Suppression Pool Temperature Monitoring cabling at the far side of Fire Area X due to the separation distance and the presence of the suppression.

There were no consequences to the health and safety of the public since equipment required for safe shutdown was available at all times. The elapsed time from discovery of the open penetration until it was sealed was four days. A fire watch patrol was in place during the time between discovery and repair. The estimated length of time this penetration seal was inoperable is ten to twelve months (1989 outage to date of repair).

CORRECTIVE ACTIONS

1. The open fire barrier penetration was sealed on July 23, 1990.

2. This event will be reviewed with technical staff during continuing Engineering & Technical Staff training which is attended by project engineers who direct construction projects in the plant. The training shall emphasize the policy and procedural requirements whenever opening penetrations in Fire Area barriers.

3. Plant Procedure 8053 will be revised, or a new procedure created, to govern and control all types of fire barrier breaches, instead of just pipe, conduit, and cable penetrations. The purpose of this corrective action is to establish consistency in the level of control required for all breaches of fire barriers. This will reduce the chance of personnel making erroneous assumptions regarding when a procedure is required to open a penetration.

4. A project will be initiated to identify and catalog all fire barrier penetrations to create a controlled document for use in penetration seal inventory and control.

5. All fire barrier penetrations will be labeled in the plant to facilitate inspections.

6. Procedure 0275-1 will be revised, based on field verifications, to include all seals on all fire barriers as determined from the results of corrective action #4.

Corrective actions for this event and ongoing corrective actions for previous event LER 89-013-01 represent a significant change and improvement in the overall approach to seal inventory and control at Monticello.

ADDITIONAL INFORMATION

Failed Component Identification :

None

Previous Similar Events :

Similar events were previously reported in Licensee Event Reports 88-004-00, 89-001-00 and 89-013-01. The corrective actions for these previous similar events did not prevent this event because all of the events have different root causes. Corrective actions for LER 89-013-01 are still in progress because they include major revisions to the inspection procedures and now fall into the breadth of corrective actions for this event.