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ACCESSION NBR:8712290093 DOC.DATE: 87/12/23 NOTARIZED: NO DOCKET #
FACIL:50-263 Monticello Nuclear Generating Plant, Northern States 05000263
AUTH.NAME AUTHOR AFFILIATION
PORTER,S.R. Northern States Power Co.
MUSOLF,D. Northern States Power Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-021-00:on 871124,ESF actuations due to improper jumper placement during preoperational testing.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 W/8 ltr. SIZE: 4
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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	AEOD/DSP/ROAB	2	2	AEOD/DSP/TPAB	1	1
	ARM/DCTS/DAB	1	1	DEDRO	1	1
	NRR/DEST/ADS	1	0	NRR/DEST/CEB	1	1
	NRR/DEST/ELB	1	1	NRR/DEST/ICSB	1	1
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	NRR/DRIS/SIB	1	1	NRR/PMAS/ILRB	1	1
	REG FILE 02	1	1	RES DEPY GI	1	1
	RES TELFORD,J	1	1	RES/DE/EIB	1	1
	RGN3 FILE 01	1	1			
EXTERNAL:	EG&G GROH,M	5	5	FORD BLDG HOY,A	1	1
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RIDS/ADDS

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
Approved OMB NO. 3150-0104
Expires 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Monticello	0 5 0 0 0 2 6 3	1 OF 0 3

TITLE (4)
ESF Actuations Due to Improper Jumper Placement During Preoperational Testing

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 NUMBERS
1 1	2 4	8 7	8 7	- 0 2 1	- 0 0	1 2	2 3	8 7		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)			
POWER LEVEL (10)	0 0 0	☐ 20.402(b)	☐ 20.405(c)	☒ 50.73(a)(2)(iv)	☐ 73.71(b)
		☐ 20.405(a)(1)(i)	☐ 50.38(c)(1)	☐ 50.73(a)(2)(v)	☐ 73.71(c)
		☐ 20.405(a)(1)(ii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(vii)	☐ OTHER
		☐ 20.405(a)(1)(iii)	☐ 50.73(a)(2)(i)	☐ 50.73(a)(2)(viii)(A)	(Specify in
		☐ 20.405(a)(1)(iv)	☐ 50.73(a)(2)(ii)	☐ 50.73(a)(2)(viii)(B)	Abstract
		☐ 20.405(a)(1)(v)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(x)	below and
					in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Stephen R. Porter, Production Engineer	6 1 2 2 9 5 - 5 1 5 1

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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

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

While performing a modification preoperational test procedure, a jumper was inadvertently installed across an isolation logic relay coil instead of the intended relay contact. This caused the fuse in an upstream distribution panel feeding the entire Primary Containment Isolation Logic Panel to blow. A shutdown cooling trip, Standby Gas Treatment system initiation and an isolation of Reactor Water Clean-up and reactor building and drywell ventilation systems resulted. The plant was five weeks into a refueling outage when the event occurred. The blown fuse was replaced and shutdown cooling was restored.

The cause of the event was failure to recognize the correct relay terminal designations and is therefore attributed to personnel error. Improper fuse coordination affected the extent of the event. To preclude similar events, additional training will be conducted and relay drawings will be made available in key areas. Fuses have been changed to improve fuse breaker coordination.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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Monticello	0 5 0 0 0 2 6 3	8 7	- 0 2 1	- 0 0	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

DESCRIPTION

At 1238 on November 24, 1987, five weeks into a plant refueling outage with the reactor in cold shutdown, a shutdown cooling trip, Standby Gas Treatment (BH) system initiation and an isolation of the Reactor Watér Clean-up (CE) and reactor building and drywell ventilation systems occurred. At the time of the event all control rods were in with the reactor vented and reactor temperature less than 212 degrees. Secondary containment and Low Pressure Core Spray (BM) division 2, were available, however not required. Reactor Water Cleanup was not available and not required.

Prior to the event and following the replacement of motor operator MO-2407 "Residual Heat Removal (BO) Dump to Waste Surge", a modification preoperational test procedure for the MO-2407 replacement was in progress. A temporary change to the procedure was made to allow stroking the valve open should an isolation signal be present. The procedure required the installation of a test jumper across an isolation relay (RLY) contact, thus ensuring a valve open permissive. While attempting to install the test jumper, wire identification was mistaken for terminal designation. The jumper was inadvertently placed across the relay coil terminals, causing a short circuit across the coil and blowing a fuse (FU) in the upstream panel which fed the entire primary containment isolation logic panel. The shutdown cooling trip, Standby Gas Treatment initiation and system isolations resulted.

Following a report from the operator installing the jumper, the event cause was identified and the location of the blown fuse determined. At 1313 on November 24, the fuse was replaced, shutdown cooling was restored, ventilation was returned to normal and the Standby Gas Treatment system was shutdown.

CAUSE

The actuation of the Engineered Safety Feature was due to a blown fuse caused by improper installation of a relay test jumper by a licensed operator in the presence of a test engineer. The cause of the event is therefore attributed to personnel error. The cause was not the result of procedural error, nor was the error cognitive in nature. There were no unusual characteristics of the work location that directly contributed to the error.

Due to fuse characteristics in the instantaneous region, a circuit fuse in an upstream panel feeding the primary containment isolation logic panel was blown rather than a feeder fuse within the containment isolation panel. This resulted in the event described rather than the isolation of just three individual containment isolation valves (ISV).

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

ANALYSIS

The Standby Gas Treatment system initiation, shutdown cooling trip and isolations of the Reactor Water Cleanup and reactor building and drywell ventilation systems did not result in any safety consequences. At the time of the event, Low Pressure Core Spray, secondary containment and Reactor Water Cleanup were not required. Low Pressure Core Spray (division 2) was however, available. The event could not have occurred under other conditions leading to more serious consequences. A prerequisite for the procedure under which the jumper was improperly installed required the reactor to be in cold shutdown or refueling mode.

Control room alarms informed operators immediately of the Standby Gas Treatment initiation and system isolations. A period of approximately 35 minutes elapsed from the time of the isolations until the blown fuse was replaced and lost systems were restored. During the event, reactor temperature increased approximately 2 degrees Fahrenheit.

CORRECTIVE ACTION

To reduce the probability of future similar events, the following corrective action has been taken or is planned:

1. Additional training on relay contact identification and terminal designation will be conducted for plant operators.

2. Relay type drawings will be made readily available in those areas where relay contacts are frequently booted or jumpered. This will aid in the proper relay contact designation identification.

3. A breaker/fuse coordination study was in progress at the time of the event and independently identified the fuse which had blown as one having a coordination problem. This fuse has been changed as required to improve coordination.

FAILED COMPONENT IDENTIFICATION

None.

PREVIOUS SIMILAR EVENTS

None.

Northern States Power Company

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

December 23, 1987

Report Required by
10 CFR Part 50, Section 50.73

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington DC 20555

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

ESF Actuations Due to Improper Jumper
Placement During Preoperational Testing

The Licensee Event Report for this occurence is attached.

This event was reported via the Emergency Notification System in accordance with 10 CFR Part 50, Section 50.72, on November 24, 1987.

Monica Vik
for David Musolf
Manager - Nuclear Support Services

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

Attachment

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