



Northern States Power Company

Monticello Nuclear Generating Plant
2807 West Hwy 75
Monticello, Minnesota 55362-9637

November 10, 1994

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

LER 94-013

Spurious 480 VAC Breaker Trip De-energizes 120 VAC Instrument Bus
Resulting in a Partial Containment Isolation

The Licensee Event Report for this occurrence is attached. This report contains the following new NRC commitments:

Operations personnel will review this Licensee Event Report.

Training will be provided to operations personnel on appropriate actions to take prior to resetting tripped 480 VAC breakers to aid in trouble shooting.

Please contact Tom Parker at (612) 295-1014 if you require further information.

William J. Anderson for RJA

Roger O Anderson
Director
Licensing and Management Issues

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

Attachment 180035

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NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95									
LICENSEE EVENT REPORT (LER) <small>(See reverse for required number of digits/characters for each block)</small>										ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.				
FACILITY NAME (1) MONTICELLO NUCLEAR GENERATING PLANT								DOCKET NUMBER (2) 05000 - 263		PAGE (3) 1 OF 6				
TITLE (4) Spurious 480 VAC Breaker Trip De-energizes 120 VAC Instrument Bus Resulting in a Partial Containment Isolation														
EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER				
10	13	94	94	013	00	11	10	94	FACILITY NAME	DOCKET NUMBER				
									05000					
									05000					
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)										
				20.402(b)		20.405(c)		<input checked="" type="checkbox"/>		50.73(a)(2)(iv)				
				20.405(a)(1)(i)		50.36(c)(1)				50.73(a)(2)(v)				
				20.405(a)(1)(ii)		50.36(c)(2)				50.73(a)(2)(vii)				
				20.405(a)(1)(iii)		50.73(a)(2)(i)				50.73(a)(2)(viii)(A)				
				20.405(a)(1)(iv)		50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)				
				20.405(a)(1)(v)		50.73(a)(2)(iii)				50.73(a)(2)(x)				
										OTHER				
										(Specify in Abstract below and in Text, NRC Form 366A)				
LICENSEE CONTACT FOR THIS LER (12)														
NAME Tom Parker								TELEPHONE NUMBER (Include Area Code) 612-295-1014						
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					
None														
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)				
YES (IF YES, COMPLETE EXPECTED SUBMISSION DATE)				<input checked="" type="checkbox"/> NO						MONTH	DAY	YEAR		

ABSTRACT LIMIT TO 1400 SPACES, I.E., APPROXIMATELY 15 SINGLE-SPACED TYPEWRITTEN LINES) (16)
NRC FORM 366 (5-91)

While operations' personnel were switching power supplies for the Division II instrument busses, the breaker supplying the busses opened causing a partial containment isolation. No cause for the breaker opening could be found.

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

Description

On October 13, 1994, during a refueling outage, a partial containment isolation (EII System Code: JM) occurred. While operations' personnel were switching power supplies for the Division II instrument busses, the breaker (EII Component Code: BKR) supplying the busses opened causing the partial containment isolation.

The Division II instrument busses (Y30 and Y80), have two supplies: an inverter (Uninterruptible Power Supply, Y81) (EII Component Code: INVT) and a 480/120 VAC transformer supplied by 480 VAC breaker 4482 (See attached Figure). Prior to the event, the busses were supplied by breaker 4482. The inverter, the normal supply, had been out-of-service for maintenance. Operations was in the process of returning the Division II instrument busses to the inverter when breaker 4482 opened. This de-energized the Division II instrument busses causing a loss of power to the Division II Primary Containment Isolation Logic. A partial containment isolation occurred including isolation of: Shutdown Cooling (EII System Code: KE) and Reactor Water Clean Up (EII System Code: CE); and the startup of the Standby Gas Treatment System (EII System Code: BH).

Cause

The cause of the breaker opening could not be determined. The following potential causes were investigated:

Was the breaker opened by personnel in the area?

A licensed operator and several construction workers were in the vicinity of the breaker (1st floor of the Emergency Filtration Building) at the time it opened. The licensed operator was in the process of placing the Division II Uninterruptible Power Supply back in service (located on the 3rd floor of the Emergency Filtration Train Building). The startup procedure for the Uninterruptible Power Supply was being used by the operator (Operations Manual Section B.9.13.05). The operator first removed the out-of-service cards on the inverter, clearing the out-of-service, but not repositioning any switches or breakers. Next, CB-1 on panel Y83 was closed, with CB-1, CB-2, and CB-

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3 on panel Y81 verified open (3rd floor of the Emergency Filtration Building). Then, the operator went to the first floor of the Emergency Filtration Train Building, where Breaker 4482 was verified closed and the 250 VDC supply breaker (D100) was closed. The operator left the first floor. The control room notified the operator that power had been lost to the Division II instrument busses. The operator returned to the Motor Control Center containing Breaker 4482. The breaker was not in the "closed" position. The breaker was reset and remained closed. The operator did not observe if the breaker was in the "open" or the "trip-free" position prior to resetting it. This information would have determined if the breaker had been opened manually or had tripped open.

Construction workers were not in the room where the breakers are located and would have no reason to trip the breaker.

Did the Breaker Open Due to Over-current?

The breaker will trip on time-dependent over-current (thermal overloads) and instantaneous over-current. The breaker is designed for a maximum normal load of 70 amps. The instantaneous over-current trips at approximately 1200 amps.

The normal load on this breaker is between 5 and 10 amps. Due to the small load on the breaker, it is unlikely that the breaker tripped on the time-dependent over-current.

The breaker was inspected and tested. No loose connections were identified. No evidence of the breaker interrupting a large current was evident. The breaker load was meggered to identify any possible system fault. None was found. Preventative Maintenance Procedure 4846 was performed on the breaker. This procedure checked the thermal overload settings, the instantaneous over-current settings and the resistance of the contacts. All readings were found to be normal.

It is very unlikely that the breaker tripped on time-dependent over-current or instantaneous over-current.

Did the Breaker Malfunction and Open?

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Information Notice 93-022 identified spurious trips of the same type of breaker that caused this event. In the cases reported in the Information Notice, the breaker could not be re-closed due to failed components. Breaker 4482 was fully functional after the event, so the problem identified in the Information Notice was ruled out as the cause of this breaker opening.

The Nuclear Plant Reliability Data System (NPRDS) data base was searched for problems with this brand of breaker and no information was found that was applicable to the circumstances associated with this event.

Was the abnormally high room temperatures a cause?

The temperatures in the Emergency Filtration Train Building were higher than normal, around 90 degrees F, since the ventilation was turned off for construction activities. Ambient temperatures can affect the time-dependent over-current trip setpoint, but the 90 degrees F temperature would not significantly affect the trip setting of the breaker. The breaker was placed in service for more than four hours at similar conditions and then tested; no problems were identified.

No reason for the breaker opening could be found.

Analysis

This event is reportable per 10 CFR Part 50, Section 50.73(a)(2)(iv) since an automatic actuation of a Engineered Safety Feature occurred. The signal was invalid but valves changed position and some of these valves were not part of the exempted systems:

- Reactor water clean-up system;
- Control room emergency ventilation system;
- Reactor building ventilation system;
- Fuel building ventilation system;
- or
- Auxiliary building ventilation system.

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The valves that closed were containment isolation valves (e.g., shutdown cooling valves, and primary containment atmospheric sample valves).

Shutdown cooling was not in service; so there were no consequences associated with the closing of the shutdown cooling valves. No change in reactor coolant temperature occurred as the reactor cavity was flooded with water. The temperature increase could have been greater if this had occurred earlier in the outage and without the reactor cavity being flooded (however, adequate time would have been available to return shutdown cooling to service prior to reaching any safety concern).

Corrective Actions

1. Operations personnel will review this Licensee Event Report.
2. Training will be provided to operations personnel on appropriate actions to take prior to resetting tripped 480 VAC breakers to aid in trouble shooting.

Failed Component Identification

None

Previous Similar Events

None

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FIGURE 1: DIVISION II UNINTERRUPTIBLE AC DISTRIBUTION SYSTEM

