



Northern States Power Company

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

January 15, 1997

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

LER 96-014

Unqualified Electrical Splice Found in
Train B of the Standby Gas Treatment System

The Licensee Event Report for this occurrence is attached. This report contains one new NRC commitment:

A review for similar electrical boxes located internal to other systems will be conducted. Those electrical boxes identified will be inspected for internal splices.

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

William J Hill
Plant Manager
Monticello Nuclear Generating Plant

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

Attachment

JE22/1

9701210537 970115
PDR ADOCK 05000263
S PDR

NRC FORM 366 (4-96)						U.S. NUCLEAR REGULATORY COMMISSION						APPROVED BY OMB NO. 3150-0104 EXPIRES 4/30/98																	
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 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.											
(See reverse for required number of digits/characters for each block)																													
FACILITY NAME (1) MONTICELLO NUCLEAR GENERATING PLANT												DOCKET NUMBER (2) 05000 - 263						PAGE (3) 1 OF 4											
TITLE (4) Unqualified Electrical Splice Found in Train B of the Standby Gas Treatment System																													
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					
12		16		96		96		014		00		01		15		97		FACILITY NAME						05000					
																		FACILITY NAME						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)						50.73(a)(2)(iv)						73.71(b)							
POWER LEVEL (10)		100 %		20.405(a)(1)(i)						50.36(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 Abstract below and in Text, NRC Form 366A)							
				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)													
LICENSEE CONTACT FOR THIS LER (12)																													
NAME												TELEPHONE NUMBER (Include Area Code)																	
Tom Parker												612-295-1014																	
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)																													
YES (IF YES, COMPLETE EXPECTED SUBMISSION DATE)												✓ NO						EXPECTED SUBMISSION DATE (15)						MONTH		DAY		YEAR	

ABSTRACT LIMIT TO 1400 SPACES, I.E., APPROXIMATELY 15 SINGLE-SPACED TYPEWRITTEN LINES) (16)
NRC FORM 366 (4-95)

An unqualified electrical splice was found in the Train B Standby Gas Treatment System, during on-line maintenance. The splice was removed. It is very unlikely that this unqualified splice could have affected the performance of safety systems during potential accidents.

A review for similar electrical boxes located internal to other systems will be conducted. Those electrical boxes identified will be inspected for internal splices.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
MONTICELLO NUCLEAR GENERATING PLANT	05000 263	96	014	00	2 of 4

Description

On December 16, 1996, while at 100% power, an unqualified electrical splice (EIS Component Code: CON) was found in the Train B Standby Gas Treatment System (EIS System Code: BH). During Train B on-line maintenance, the system engineer was performing an as-built inspection of the electrical connections for the train heater (EIS Component Code: EHTR). After opening the electrical connection box, it appeared that a connection in the box was bolted and then taped. This is not in accordance with the Environmental Qualification program requirements. A work order was written to investigate. The splice was confirmed to not meet the environmental qualification program requirements.

The similar electrical box in Train A was found not to have any unqualified splices.

Cause

The connection appears to be associated with original plant construction. No electrical modifications have been made to this heater since the environmental qualification program has been implemented.

In 1987, all applicable electrical connections were reviewed to assure that splices were in accordance with the environmental qualification program. Electrical boxes in the Standby Gas Treatment system were inspected in 1987. The electrical box containing this splice is internal to the ventilation ductwork and was missed during this check. No other similar electrical boxes exist in the Standby Gas Treatment System.

Analysis of Reportability

This event is reportable per 10 CFR Part 50, Section 50.73(a)(2)(ii) since this event resulted in the plant being outside the design basis. The unqualified splice made Train B of the Standby Gas Treatment System technically inoperable. Since this had probably existed since original construction and the problem was unknown until December 16, 1996, during times when Train A was out-of-service, no Standby Gas Treatment System train can be assured to have been available. Therefore, during times when there was no Standby Gas Treatment train operable, the plant was outside its design basis.

NRC FORM 366A (5-97)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				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)		DOCKET NUMBER (2)		LER NUMBER (6)	
MONTICELLO NUCLEAR GENERATING PLANT		05000 263		YEAR 96	SEQUENTIAL NUMBER 014
				REVISION NUMBER 00	PAGE (3) 3 of 4

Safety Significance

The purpose of the Standby Gas Treatment System is to maintain a slight negative pressure in the Secondary Containment, when Secondary Containment is isolated during a Loss of Coolant Accident and a Refueling Accident. The Standby Gas Treatment System maintains this negative pressure by pumping air from the Secondary Containment and releasing this air to the environment as an elevated release, following filtering.

Charcoal beds in each train are provided to filter the system exhaust prior to release to the environment. If the exhaust was saturated with humidity, condensation could occur in the charcoal beds. This would decrease the effectiveness of the charcoal. Heaters are installed upstream of the charcoal beds to pre-heat the air to decrease the relative humidity of the air entering the charcoal beds. The charcoal beds are designed to operate with 70% humidity air entering the beds, and the charcoal is conservatively tested at 95% humidity.

In order for the filtration of the secondary containment exhaust to have been less than the design basis assumed, all of the following would have had to occur:

- 1) Train A Standby Gas Treatment System out of service,
- 2) a Loss of Coolant Accident or Refueling Accident,
- 3) radioactivity released from the Primary to the Secondary Containment,
- 4) high humidity conditions in the Secondary Containment,
- 5) radiation fields cause the Train B unqualified heater splice insulation to degrade, and
- 6) the heater power cable contacted another surface, causing the Train B heater to fail.

The splice was not touching any other surface. Since the wire is an 8 gauge cable and therefore very stiff, it is very unlikely that the degraded splice insulation would have resulted in an electrical problem.

Without any one of these items, the design basis would have been met.

The likelihood of all of these conditions existing at the same time are very improbable. Therefore, there is little safety significance to this unqualified electrical splice.

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (8)	
MONTICELLO NUCLEAR GENERATING PLANT		05000 263		YEAR 96	SEQUENTIAL NUMBER 014
				REVISION NUMBER 00	PAGE (3) 4 of 4

Actions

Immediate Actions

A work order was written to investigate the splice.

Corrective Actions

The unqualified splice was removed, during the on-line maintenance. The wire end that was spliced, was landed directly on a heater connection. The train was tested and returned to service.

Preventive Actions

A review for similar electrical boxes located internal to other systems will be conducted. Those electrical boxes identified will be inspected for internal splices.

Failed Component Identification - None

Similar Events - None