



**Northern States Power Company**

Monticello Nuclear Generating Plant  
2807 West County Road 75  
Monticello, MN 55362

April 3, 2000

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 2000-008**  
**Primary Containment Isolation of TIP Ball Valves Does Not Function**  
**Independently of Normal Controls**

The Licensee Event Report for this occurrence is attached.

There are no new NRC commitments included in this report:

Contact Patrick Burke, Project Manager, at (763) 295-1661 if you require further information.

Byron Day  
Plant Manager  
Monticello Nuclear Generating Plant

c: Regional Administrator – III, NRC  
NRR Project Manager, NRC

Sr Resident Inspector, NRC  
Minnesota Department of Commerce

Attachment

IE22

NRC FORM 366 (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION		<b>APPROVED BY OMB NO. 3150-0104      EXPIRES 06/30/2001</b> <small>Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to the industry. Forward comments regarding burden estimate to the Records Management Branch(T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to the information collection.</small>							
<b>LICENSEE EVENT REPORT (LER)</b>  <small>(See reverse for required number of digits/characters for each block)</small>				DOCKET NUMBER (2) <div style="text-align: center;">05000 – 263</div>		PAGE (3) <div style="text-align: center;">1 OF 3</div>					
FACILITY NAME (1) <div style="text-align: center;">MONTICELLO NUCLEAR GENERATING PLANT</div>											
TITLE (4) Primary Containment Isolation of TIP Ball Valves Does Not Function Independently of Normal Controls											
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 NAME	DOCKET NUMBER	
03	03	00	00	-- 008 --	00	04	03	00	FACILITY NAME	DOCKET NUMBER 05000	
OPERATING MODE (9)		N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		100		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)	
				20.2203(a)(1)		20.2203(a)(3)(i)		X 50.73(a)(2)(ii)		50.73(a)(2)(x)	
				20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71	
				20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER	
				20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)							
LICENSEE CONTACT FOR THIS LER (12)											
NAME Mr. Patrick Burke						TELEPHONE NUMBER (Include Area Code) 763-295-1661					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR		
YES (If yes, complete EXPECTED SUBMISSION DATE).				X NO							

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On March 3, 2000, with the plant operating at 100% power, a design deficiency was identified in the traversing in-core probe (TIP) system. The deficiency could result in the TIP guide tube isolation ball valve failing to maintain primary containment integrity during a design basis accident. Power to the TIP ball valves has been isolated to assure the valves do not inadvertently open.

NRC FORM 366A (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION									
<b>LICENSEE EVENT REPORT (LER)</b> TEXT CONTINUATION											
FACILITY NAME(1) <b>MONTICELLO NUCLEAR GENERATING PLANT</b>	DOCKET <b>05000-263</b>	LER NUMBER (6) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 2px;">YEAR</td> <td style="width: 30%; padding: 2px;">SEQUENTIAL NUMBER</td> <td style="width: 30%; padding: 2px;">REVISION NUMBER</td> </tr> <tr> <td style="text-align: center;">00</td> <td style="text-align: center;">-- 008 --</td> <td style="text-align: center;">00</td> </tr> </table>			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	00	-- 008 --	00	PAGE (3) <b>2 of 3</b>
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER									
00	-- 008 --	00									

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

### Description

On March 3, 2000, with the plant operating at 100% power, engineering personnel reported that a design deficiency existed with the plant's traversing in-core probe (TIP) system<sup>1</sup>. The report indicated that non-safety related devices (i.e. relays and probe position transducer) are used in control circuits needed to maintain the TIP guide tube isolation ball valves<sup>2</sup> closed in the event of a primary containment isolation. Failure of these non-safety related devices could result in the TIP guide tube isolation ball valves opening following a design basis accident. Additionally, it was determined that position indication for the ball valves has not been qualified in accordance with Regulatory Guide 1.97.

### Event Analysis

#### Analysis of Reportability

This issue is being reported as a condition outside the design basis of the plant in accordance with 10 CFR 50.73(a)(2)(ii)(B).

#### Analysis of Safety Significance

A calculation has been performed to evaluate the radiological consequences of the spurious opening of the TIP guide tube isolation ball valves. The typical primary containment leakage plus the expected TIP guide tube isolation ball valves leakage would be less than the limiting leakage of  $L_a$ . Control room operator dose would increase a small amount and would continue to remain significantly below the GDC 19 limit and the expected dose to the public would increase a small amount and continue to be significantly less than the 10 CFR 100 limit.

<sup>1</sup> EIS System Code: IC

<sup>2</sup> EIS Component Code: ISV

NRC FORM 366A (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION									
<b>LICENSEE EVENT REPORT (LER)</b> TEXT CONTINUATION											
FACILITY NAME(1) <b>MONTICELLO NUCLEAR GENERATING PLANT</b>	DOCKET <b>05000-263</b>	LER NUMBER (6) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 2px;">YEAR</td> <td style="width: 20%; padding: 2px;">SEQUENTIAL NUMBER</td> <td style="width: 20%; padding: 2px;">REVISION NUMBER</td> </tr> <tr> <td style="text-align: center; padding: 2px;">00</td> <td style="text-align: center; padding: 2px;">-- 008 --</td> <td style="text-align: center; padding: 2px;">00</td> </tr> </table>			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	00	-- 008 --	00	PAGE (3) <b>3 of 3</b>
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER									
00	-- 008 --	00									

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

The following table shows the expected impact on Control Room (CR), Exclusion Area Boundary (EAB), and Low Population Zone (LPZ) LOCA dose:

Location	Total Dose (Rem)				Regulatory Guideline (Rem)	
	Current USAR Value		With TIP Leakage			
	Thyroid	Whole Body	Thyroid	Whole Body	Thyroid	Whole Body
CR	13.45	.095	13.48	.095	30	5
EAB	4.81	.83	4.86	.83	300	25
LPZ	11.46	.38	11.50	.38	300	25

#### Cause

This issue involves a concern with original plant design that was identified through the review of industry operating experience.

#### Corrective Actions

1. Engineering personnel have performed a review of the primary containment isolation logic to ensure that other isolation schemes do not rely on non-safety related sensors or circuits.
2. Currently, the TIP ball valves are disabled in the closed position using tagged open circuit breakers in the power supplies to the drive mechanisms. Administrative controls ensure that power to the TIP control circuits will continue to be isolated when the TIP system is not in service. This action will prevent any ball valve from inadvertently opening during a containment isolation event.
3. Actions will be taken to assure that Monticello is within its licensing basis when the TIP system is in use.

#### Failed Component Identification

Not applicable

#### Similar Events

None