



July 13, 2009

L-MT-09-055
10 CFR 50.73

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

Monticello Nuclear Generating Plant
Docket No. 50-263
Renewed License No. DPR-22

LER 2009-003, "Main Steam Line "B" Flow Isolation Instrumentation Inoperable due to Leaking Equalizing Manifold Valve"

A Licensee Event Report (LER) for this occurrence is attached.

This letter contains no new commitments and no revisions to existing commitments.

A handwritten signature in black ink, appearing to read 'Timothy J. O'Connor', written over the typed name.

Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power - Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC

NRC FORM 366 (9-2007)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104				EXPIRES 8-31-2010			
LICENSEE EVENT REPORT (LER)					Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.							
FACILITY NAME (1) Monticello Nuclear Generating Plant					DOCKET NUMBER (2) 05000263				PAGE (3) 1 of 4			
TITLE (4) Main Steam Line "B" Flow Isolation Instrumentation Inoperable due to Leaking Equalizing manifold Valve												
EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER		
05	12	2009	2009	- 003	- 00	07	13	2009	FACILITY NAME	DOCKET NUMBER		
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)								
POWER LEVEL (10)		50%		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)		
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)		
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)		
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)		
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A		
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		X 50.73(a)(2)(v)(C)				
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		X 50.73(a)(2)(v)(D)				
				20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)				
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)				
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)				
LICENSEE CONTACT FOR THIS LER (12)												
NAME Ron Baumer						TELEPHONE NUMBER (Include Area Code) 763-295-1357						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)												
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX			
X	SB	ISV	X000	Y								
SUPPLEMENTAL REPORT EXPECTED (14)							EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE).					X	NO						
ABSTRACT												
<p>On 05/12/2009 at 21:30, while raising power from 30 to 50%, Operators entered an action statement pertaining to TS 3.3.6.1 due to the apparent failure of 'B' Main Steam Line Flow Isolation Sensor. The action statement was related to the loss of safety function due to the 'B' MSL flow isolation indication indicating approximately 25% lower than the other three flow instruments. The cause of the event was the manifold equalizing valve failure to fully close due to galling of the valve stem threads. Immediate corrective actions were to isolate the indicator and replace the manifold equalizing valve. Planned actions are to replace all three-way Fetterolf safety related and/or risk significant instrumentation manifold equalizing valves and four ATWS three-way manifolds and two manifolds associated with risk significant instruments.</p>												

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Monticello Nuclear Generating Plant	05000263	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		2009	- 003	- 00	

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

Event Description

On 05/12/2009 at 21:30, the Monticello Nuclear Generating Plant was in Mode 1 increasing power from 30 to 50% following a refueling outage. During the increase, the "B" steam flow indication read low compared to the other Main Steam [SB] Line (MSL) flow indications. I&C Maintenance investigated and determined that although the indicator [FI] was within the acceptable calibration range, it was slightly lower than expected. The instrument was adjusted however, the adjustment did not correct the unexpectedly low indication Operations entered an action statement pertaining to Technical Specification 3.3.6.1 due to the apparent failure of 'B' Main Steam Line Flow Isolation Sensor. The action statement was related to the loss of safety function due to the 'B' MSL flow isolation indication reading approximately 25% lower than the other three flow isolation indicators and showing signs of continuing to degrade.

A partially open equalizer valve can cause the differential pressure across all of the indications on a common line to degrade, causing abnormally low indication. A maintenance technician, as instructed, attempted to manually tighten all of the manifold equalizing valves [ISV] on the 'B' MSL flow indications to determine whether a mispositioned valve may have caused leakage. Although none of the equalizing valves felt open, the technician noted that one of the manifold equalizer valves was warm to the touch. Further investigation 15 minutes later revealed that the manifold equalizer valve had heated significantly. An infrared temperature camera revealed that the manifold body was approximately 470°F.

From this information, Operations duty crew concluded a manifold equalizing valve was leaking by. The Shift Supervisor directed isolation of the manifold immediately using the manifold isolation valves [ISV]. "B" MSL flow isolation and steam flow indication returned to normal following the isolation and on 05/12/09 at 22:13 the action statement was exited. At 01:36 on 05/13/09 an eight-hour report was made to the NRC Operations Center per 10 CFR 50.72(b)(3)(v)(C and D).

Event Analysis

The event was reportable under 10 CFR 50.72(b)(3)(v)(C and D) – An event or condition that would have prevented the fulfillment of a safety function i.e.: loss of Group I "B" MSL high flow isolation signal (Control Rod release and Accident Mitigation). Therefore a Licensee Event Report is required for this event under 10 CFR 50.73(a)(2)(v)(C and D) "Any event or condition that could have prevented the fulfillment of a safety function."

The event is considered a safety system functional failure since the event would have had the potential to prevent the fulfillment of the safety functions of Control of Radiological Release and Mitigation of an Accident.

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Safety Significance

The Probabilistic Risk Assessment group review of the nuclear safety significance associated with failure of the "B" Main Steam Line (MSL) high flow Group I isolation signal found the significance to be very low. The significance is bounded by the probability of a MSL break on the "B" line for the period of time from the start of reactor pressurization to the time when the instrument was isolated. Several other considerations would reduce the risk of a fuel failure event significantly further. Some of these considerations include:

- The high steam flow group I isolation would be backed up by a reactor water level low level signal and a steam chase high temperature isolation signal for steam breaks outside the primary containment. Steam breaks inside the drywell would result in a direct scram from high drywell pressure. Under some conditions, the high steam flow isolation would occur from high flow signals generated in the remaining three steam lines via the equalizing steam header and out the break on "B" steam line.
- Safety systems were available following the startup from outage, and would have been capable of performing their function of providing makeup water to the reactor vessel and removing decay heat from the containment.

Cause

The root cause of the failure of the manifold equalizing valve is a program deficiency involving the failure to adequately maintain lubricant on the threaded components over the life of the valve. Contributing causes include valve designs that expose the threads to the process fluid and the subsequent loss of lubrication after repeated valve operations.

Corrective Action

The investigation was performed under AR01181868 and the following corrective actions have been taken or are planned: Immediate corrective actions were to isolate the indicator and replace the manifold equalizing valve. Planned actions are to replace all three-way Fetterolf safety related and/or risk significant instrumentation manifold equalizing valves and four ATWS three-way manifolds and two manifolds associated with risk significant instruments. Until the manifolds are replaced and since the valves cannot be lubricated an interim action to revise applicable surveillance procedures to require the technician to ensure the number of turns for closing of the valve matches the as number of turns for opening the valve will be performed. This will help to ensure no galling has taken place and to prevent the flow of fluid between instruments.

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Failed Component Identification

Instrument Valve Manifold, Fetterolf IVM Three-way manifold

Previous Similar Events

CAP #035989 (December, 2004) - Documented the removal of a level transmitter from service due to galling on the equalizer valve. The seizing of the valve threads prevented I&C Specialists from restoring the transmitter from service. The system was repaired and returned to service. The instrument manifold was an Imperial Eastman model.

CAP #01180972 (May, 2009) - The investigation revealed galled threads preventing the equalizing valve for a level transmitter from fully closing which drained the reference leg. The failed valve was replaced. The instrument manifold was an Imperial Eastman model.