

May 20, 2002

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 2002-003 <u>Primary Containment Group 3 Isolation Signal on High Flow</u> While Repressurizing Reactor Water Cleanup System Piping

A Licensee Event Report for this occurrence is attached. This report contains no new NRC commitments.

Contact Doug Neve, Licensing Project Manager, at (763) 295-1353 if you require further information.

Jeffrey S. Forbes

Site Vice President Monticello Nuclear Generating Plant

Enclosure

c: Regional Administrator - III NRC NRR Project Manager, NRC Resident Inspector, NRC Minnesota Department of Commerce

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NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER)					APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004 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 bis@mc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-1020 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection													
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4. TITLE Primary Containment Group 3 Isolation Signal on high Flow While Repressurizing Reactor Water Cleanup System Piping																		
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realize that during the investigation process voids had been created within the system																		
When repressurizing the system, high flow rates resulted in actuation of the protection																		
logic.	logic. Following resolution of these issues and completion of maintenance, the RWCU																	
syste	system was pressurized and returned to service at 0310 on March 24, 2002.																	

NRC FORM 366A	U.S. NUCLEAR REGULATORY COMMISSION
(1-2001)	
	LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)		LER NUMBER (6)	PAGE (3)	
Monticello Nuclear Generating Plant	05000263	YEAR 2002	sequential number - 003 -	REVISION NUMBER 00	2 OF 4

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

Description

While operating at 100% power at 1727 on March 22, 2002, an automatic Group 3 containment isolation signal¹ was initiated after system flow instrumentation² sensed a high Reactor Water Cleanup³ (RWCU) system flow condition. This initiated the automatic closure of RWCU system and recirculation sampling⁴ isolation valves⁵.

Maintenance Personnel had performed work earlier in the week to repair leakage on No. 11 RWCU filter demineralizer (F/D)⁶ isolation valves. Operations personnel were in the process of restoring the system and had performed the filling and venting portion of the procedure, when indications of continued valve leakage prompted further investigation to identify the source of the leakage. This investigation, which included depressurizing the RWCU system, inadvertently created a system void.

Following this investigation, the operating crew once again initiated system restoration activities. However, the fill and vent portion of the restoration procedure was not re-performed prior to opening the system inlet isolation valve. This resulted in initiation of the RWCU high flow trip as water refilled the system. This trip is activated at a flow rate of \geq 460 gallons/minute persisting for \geq 10 seconds. After evaluation of the cause of the high flow signal, operators reset the Group 3 isolation logic and reopened the recirculation coolant sample valves.

Several hours earlier, a momentary high RWCU flow alarm was received when the system inlet valve was slowly opened during troubleshooting. The valve was quickly closed after system pressure was observed to increase rapidly. The appropriate annunciator response procedure was followed and the alarm cleared and was reset. However, the significance of receiving this alarm and the potential for automatic actuation of the isolation logic was not fully understood by personnel involved with the RWCU maintenance.

Following preliminary investigation of the Group 3 isolation and completion of isolation valve maintenance, the RWCU system was pressurized and returned to service at 0310 on March 24, 2002.

¹ EIIS System Name:	JM
² Component Function Identifier:	FT
³ EIIS System Name:	CE
⁴ EIIS System Name:	KN
⁵ Component Function Identifier:	ISV
⁶ Component Function Identifier:	FDM

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U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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Event Analysis

Analysis of Reportability

The event is reportable under 10CFR 50.73(a)(2)(iv)(A), as an automatic actuation of a containment isolation signal affecting valves in more than one system as specified in 10CFR 50.73(a)(2)(iv)(B)(2).

The event does not constitute a safety system functional failure.

Safety Significance

The safety significance of the event is considered to be low. While the Group 3 isolation signal was unplanned, the RWCU system was removed from service for maintenance at the time. The isolation signal has no adverse impact on plant safety. Similarly, isolation of the recirculation coolant sampling lines for a short period of time had little or no impact on plant safety.

The Monticello Probabilistic Risk Assessment group reviewed this event. The group concluded that the event posed no significant additional risk of core damage because the Reactor Water Cleanup (RWCU) system is not credited for any of the critical safety functions modeled in the on-line Probabilistic Risk Assessment. The risk of malfunction or improper operation in the restoration of the RWCU system to service resulting in a transient (scram or reactor shutdown) is low, and the consequence of such a transient, if it were to occur, is minimal due to the fact that other critical safety functions are not impacted by the loss of the RWCU system.

Cause

The operating crew did not apply their knowledge of system hydrodynamics prior to restoring the RWCU to service following maintenance. This caused them to omit the re-performance of the fill and vent portion of the restoration procedure, thereby leading directly to the high flow condition and Group 3 isolation.

The momentary high flow alarm that was received earlier was not adequately investigated prior to continuing with troubleshooting activities. If the cause of this alarm had been fully understood, the need to fill and vent the system prior to returning it to service may have been recognized.

The annunciator response procedure (ARP) for the RWCU high flow alarm didn't provide operators with adequate guidance. Receipt of this alarm can result from several causes and

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must be investigated locally. The ARP did not clearly indicate that the high flow signal starts the 10-second Group 3 isolation timer.

A troubleshooting plan was not used to control the investigation of leakage into the F/D unit. A troubleshooting plan, recommended by plant directives in this case, would have provided a structured approach for the investigation. Proper scoping of the job would have identified the possible actuation of the Group 3 isolation logic during system restoration.

Corrective Actions

Shift Managers reviewed the hydrodynamics of this event with all operations personnel.

The Shift Operations Manager will monitor crew performance during specific simulator scenarios designed to assess use of conservative decision-making criteria.

The high RWCU flow ARP will be revised to clearly describe the automatic actions that will result if the RWCU high flow has been tripped and the other automatic actions initiated by other trip units that alarm under this common annunciator. The procedure for restoring the RWCU system to service will be revised to alert operators to the fact that receipt of the high flow alarm is a possibility during this activity and that a Group 3 isolation may result.

The Operations Manager issued a letter to all operations personnel explaining his expectations for adherence to the plant troubleshooting directive to control future investigations of this nature.

Failed Component Identification

None.

Previous Similar Events

Actuation of Group 3 isolation logic during maintenance activities has occurred in the past. A recent Group 3 isolation was reported in LER 2000-003, "Procedural Inadequacy Results in Two Automatic Closures of Recirculation Sample Containment Isolation Valve." The circumstances surrounding LER 2000-003 and the event described in this report are sufficiently different, however, that the corrective actions taken in response to the earlier event would not have prevented this event.