



August 30, 2007

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10 CFR Part 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 2007-004, "Degradation of Emergency Service Water Flow to Emergency Core Cooling System Room Cooler"

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

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

 Tim T. O'Connor

Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosure

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



NLR

NRC FORM 366 (6-2004)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 <small>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.</small>		EXPIRES 6-30-2007						
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)												
FACILITY NAME (1) Monticello Nuclear Generating Plant				DOCKET NUMBER (2) 05000263		PAGE (3) 1 of 4						
TITLE (4) Degradation of Emergency Service Water Flow to Emergency Core Cooling System Room Cooler												
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		
07	02	2007	2007 - 004 - 00			08	30	2007	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)		100	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)			
		100	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)		X	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)		50.73(a)(2)(v)(C)					
			20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
			20.2203(a)(2)(v)		X	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		

SUPPLEMENTAL REPORT EXPECTED (14)						EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR	
YES (If yes, complete EXPECTED SUBMISSION DATE).				X	NO							

ABSTRACT

During performance of the 13 FSW Quarterly Pump and Valve tests on July 2, 2007 a low flow condition was identified to the 'A' RHR Room. This required the RHR and Core Spray pumps in the 'A' RHR room to be declared inoperable due to inadequate room cooling. With multiple components of Low Pressure Emergency Core Cooling System declared inoperable, Technical Specification (TS) LCO 3.0.3 was entered requiring a plant shutdown. Operations flushed the system, restoring adequate flow and exited the TS 3.0.3 LCO prior to reduction of reactor power.

There were two causes of the event: (1) throttling of the FSW ECCS Room Cooler outlet valve during the most recent refueling outage led to plugging of the line which resulted in reduced flow and (2) inadequate acceptance criteria and testing methodology for the FSW system resulted in the failure of site personnel to recognize the FSW system was operating at low margin. The corrective actions for this event are: the normal position of the throttled valve was changed to fully opened, the surveillance was re-performed satisfactorily, and initiation of a project to improve system margin.

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

Description

On July 2, 2007, the station was performing the quarterly surveillance test 13 Emergency Service Water (FSW) [KG] Quarterly Pump [P] and Valve [V] Tests. During performance of this test it was identified that the flow to the "A" ECCS [BO] room was 11.2 gpm versus the stated acceptance criterion of 41.31 gpm. TS action statements 3.5.1 conditions A, B, and M, and TS LCO 3.0.3 were entered. Operations personnel immediately flushed the room cooler lines. This resulted in restoring adequate flow to the "A" ECCS Room Cooler. TS action statements 3.5.1 conditions B and M and TS LCO 3.0.3 were exited. After further analysis, the normal position of SW-115 was changed to full open by the station.

Operations remained in TS action statement 3.5.1 condition A because the #13 RHR Pump continued to be inoperable due to insufficient motor cooling flow. Permanent flow indication was installed on the RHR pump motor and a calculation was revised to establish the flow requirements for the "A" FSW to the RHR pump motor. This action statement was exited on July 24, 2007 with the successful performance of the quarterly surveillance which validated the operability of all "A" FSW served components.

Event Analysis

This event is reportable under 10 CFR 50.73(a)(2)(i)(B) - any operation or condition which was prohibited by the plant's Technical Specifications. The degraded flow rate to the ECCS room cooler resulted in the station entering TS action statement 3.5.1.M which directed entry into TS LCO 3.0.3, due to multiple ECCS components being inoperable. Therefore the event is reportable under this requirement because a subsequent review of past operability determined that on approximately May 25, 2007, FSW flow to the "A" ECCS Room Cooler had degraded below the minimum requirement.

This event is also reportable under 10 CFR 50.73(a)(2)(v)(B) - Loss of Safety Function. Subsequent review of past operability determined that on approximately May 25, 2007 FSW flow to the "A" ECCS room cooler was below the minimum required. On June 18, 2007 and June 20, 2007 the "B" Residual Heat Removal Service Water (RHRSW) train was inoperable for a few hours while a RHRSW pump was replaced. This caused a loss of decay heat removal and containment cooling safety function (both trains inoperable) and therefore this event is reportable under this requirement.

The event is classified as a safety system functional failure.

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Safety Significance

The function of the Division I Emergency Service Water (FSW) System is to provide cooling water to the condensers of the Control Room Ventilation [VI] air conditioning units, ECCS pump motor oil coolers [CLR] and ECCS (Low Pressure ECCS and HPCI) room coolers under loss of off-site power and accident conditions.

The FSW System consists of two redundant and completely segregated loops. Under accident conditions, cooling water is drawn from the intake structure (river water) and discharged from each FSW System pump through separate lines. During normal plant operation cooling water is supplied to components served by FSW from the Service Water System [KG] through crossties to the FSW system.

The safety significance of this event was reviewed by the Probabilistic Risk Assessment (PRA) department and was determined to be low.

There are two important insights related to the safety significance of the motor cooling supply to Division I RHR pump P-202C, and room cooling supply to the Division I Low Pressure ECCS pump room.

First, the importance of the pump (P-202C) itself is low. CDF increases from a baseline value of 5.99 E-06/yr to 6.28 E-06/yr (green) given the pump is assumed completely unavailable. CDF increases to 6.81 E-06/yr (green) if all three Division I low pressure ECCS pumps (P-202A, P-202C, and P-208A) are assumed to be completely unavailable, an increase in CDF of less than 1.0 E-06/yr. The relatively low significance of these low pressure pumps is due to the redundancy of low pressure makeup capability and decay heat removal capability. Low pressure makeup can be accomplished with one of two condensate pumps, one of two core spray pumps, one of four RHR pumps, one of two RHRSW pumps, the condensate service water system or the fire water system. Division I RHR decay heat removal (Suppression Pool Cooling, Shutdown Cooling, Drywell Spray) is backed up by the opposite division of RHR as well as the main condenser, and various methods of venting the primary containment.

Second, the RHR and Core Spray pumps are assumed to remain available given there is no cooling to their motors or their room coolers. The pumps are intentionally modeled without dependence on Service Water or Emergency Service Water. This PRA assumption is based on room and motor temperature data that was taken while simultaneously running all three Division I low pressure ECCS pumps without room or motor cooling.

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A review was also performed for the past operability condition. The PRA group determined based on only one of the RHRSW pumps was out of service and the second was inoperable only for seismic concerns and available, the change in CDF due to this condition was minimal.

In conclusion, the safety significance in terms of reactor safety was not significant and no radiological releases occurred to the environment as a result of the event.

Cause

There were two causes of the event: (1) Throttling of the FSW ECCS Room Cooler Outlet valve during the most recent refueling outage led to plugging of the line which resulted in reduced flow and (2) Inadequate acceptance criteria and testing methodology for the FSW system resulted in the failure of site personnel to recognize the FSW system was operating at low margin.

Corrective Action

The following actions are planned or have been taken for this event:

1. Perform a calculation to determine and document acceptance criteria for flow requirements in the FSW system, clearly classify the criteria as TS operability requirements for FSW, the serviced components, or both. (Complete)
2. Initiate long term improvement project to resolve FSW system margin issues.
3. Clarify guidance for creating test acceptance criteria for FSW surveillances.

Failed Component Identification

None

Previous Similar Events

During surveillance testing performed on 1/26/07, 2/9/07, and 2/13/07, the "B" FSW system was unable to provide the minimum system and component flows required by the surveillance tests. This issue was investigated in an Apparent Cause Evaluation. The corrective actions taken for the investigation were reviewed and determined to be effective with the exception of the performance of the flow balancing which was performed by throttling SW-115 and led to this event.