

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Cooper Nuclear Station										DOCKET NUMBER (2) 0 5 0 0 0 2 9 8										PAGE (3) 1 OF 0 2																																							
TITLE (4) Group 3 Isolation																																																											
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 NAMES										DOCKET NUMBER(S)																			
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OPERATING MODE (9) N										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																																																	
POWER LEVEL (10) 0 1 5										20.402(b)										20.405(c)										X 50.73(a)(2)(iv)										73.71(b)																			
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										20.405(a)(1)(ii)										50.36(c)(2)																				50.73(a)(2)(vi)										OTHER (Specify in below and in Text, 366A)									
										20.405(a)(1)(iii)										50.73(a)(2)(i)																				50.73(a)(2)(vii)(A)																			
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LICENSEE CONTACT FOR THIS LER (12)																														TELEPHONE NUMBER																													
NAME E. M. Mace, Plant Engineering Supervisor																				AREA CODE 4 0 2 8 2 5 - 3 8 1 1																																							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																											
CAUSE			SYSTEM			COMPONENT				MANUFACTURER			REPORTABLE TO NPDOS				CAUSE			SYSTEM			COMPONENT				MANUFACTURER			REPORTABLE TO NPDOS																													
X			C/E			S/E/A/L				C/6/8/1			N																																														
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 fifteen single-space typewritten lines) (16)																																																											
<p>An Engineered Safety Feature (Primary Containment Group 3 Isolation) was challenged on November 23, 1985 at 0400 due to the trip of Reactor Water Cleanup (RWCU) system space temperature switches. A Group 3 isolation results in the closure of the RWCU system containment isolation valves. The reactor mode switch was in Run (approximately 15% thermal power). reactor pressure was 940 psig, and the main turbine generator was being prepared for grid synchronization at the time of this event.</p> <p>Investigation by station operators revealed that the "A" RWCU pump mechanical seal had failed, resulting in a steam leak which subsequently tripped the RWCU steam leak detection logic. Accordingly, the "A" RWCU pump was isolated from the system. The RWCU system, using "B" pump, was restarted at 0714.</p> <p>After removal and disassembly of the mechanical seal, inspection revealed that a retaining ring on the shaft sleeve had slipped axially resulting in loss of seal rotating face preload.</p> <p>This failure can be attributed to procedural inadequacy in that the mechanical seal assembly procedure did not stipulate proper methodology to secure the retaining ring on the shaft sleeve. The assembly procedure will be corrected, accordingly.</p> <p>This event presented no adverse consequences to the public health and safety.</p>																																																											
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Cooper Nuclear Station	0 5 0 0 0 2 9 18	8 5	— 0 1 8	— 0 0	0 2	OF	0 2

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

On November 23, 1985, at 0357, control room operators received a "High Area Temperature" alarm in the "A" Reactor Water Cleanup (RWCU) pump room. Three minutes later, at 0400, a Primary Containment Group 3 isolation occurred due to a trip of the RWCU steam leak detection system logic. Station Technical Specifications require that the leak detection logic trip at $\leq 200^{\circ}\text{F}$ space temperature. The area temperature system alarms at 140°F and trips at 190°F . Both logic channels tripped, resulting in closure of both RWCU system containment isolation valves (Group 3 isolation). The reactor mode switch was in Run (approximately 15% thermal power), reactor pressure was 940 psig, and the main turbine generator was being prepared for grid synchronization at the time of this event.

A subsequent investigation by station operators revealed that the "A" RWCU system pump mechanical seal had failed, resulting in a steam leak that tripped the RWCU steam leak detection logic. Accordingly, the "A" RWCU pump was manually isolated from the system. The Group 3 isolation was reset and the RWCU system restored to service at 0714, using "B" RWCU pump only.

The "A" RWCU pump mechanical seal is a typical industrial type mechanical seal manufactured by the Crane Packing Company. It consists of a stationary ring, a rotating ring, a shaft sleeve and a retainer ring. The stationary ring is secured to the seal flange, which is bolted to the pump casing. The rotating ring is held against the stationary ring by springs located in the retainer ring. The retainer ring is secured to the shaft sleeve by setscrews. The shaft sleeve, in turn, is secured to the pump shaft. The actual seal is formed between the stationary ring face and the rotating ring face.

After removal of the mechanical seal, inspection revealed that the retaining ring had slipped axially on the shaft sleeve resulting in the loss of rotating ring preload. This allowed the rotating and stationary ring faces to separate, resulting in the loss of the seal.

This failure can be attributed to procedural inadequacy in that the mechanical seal assembly procedure does not require that recesses be drilled into the shaft sleeve to aid in seating the setscrews. It was determined that, even though the assembly procedure does not require it, recesses have been typically used (in accordance with vendor manual recommendations) to aid in seating the setscrews. The District believes that the failed seal was assembled by personnel who did not deviate from the procedure, but that a procedural inadequacy existed that resulted in a condition which led to the failure of the seal. Therefore, the procedure will be modified to ensure that the retaining ring is properly secured to the shaft sleeve.

This event represented no adverse consequences to the public health and safety.

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Nebraska Public Power District

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TELEPHONE (402) 825-3811

CNSS850710

December 23, 1985

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

Cooper Nuclear Station Licensee Event Report 85-018 is forwarded as an attachment to this letter.

Sincerely,

P. V. Thomason
Division Manager of
Nuclear Operations

PVT:lb

Attach.

cc: R. D. Martin
L. G. Kunc1
J. D. Weaver
L. R. Berry
INPO Records Center
ANI Library

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