NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Cooper Nuclear Station	0 5 0 0 0 2 9 8	1 OF 0 2

TITLE (4)

RWCU Group III 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)
										0 5 0 0 0
0 2	2 7	8 6	8 6	— 0 0 4	— 0 0	0 3	2 7	8 6		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
N		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
E. M. Mace, Plant Engineering Supervisor	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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)

At 1017, February 27, 1986, an engineered safety feature (Primary Containment Isolation System Group III Isolation) was challenged during normal reactor vessel cooldown. The reactor mode switch was in Shutdown (thermal power less than 1%), reactor pressure was 50 psig, vessel level was 26 inches, and Reactor Water Cleanup (RWCU) inlet temperature was 303°F at the time of this event. The challenge was due to an indicated RWCU high system flow of less than or equal to 200% (Group III isolation signal that closes the RWCU system primary containment isolation valves). This event occurred approximately six hours after a reactor scram (reference LER 86-006). A combination of conditions occurred simultaneously which eventually led to flashing in the RWCU system resulting in a 200% flow indication. Normal RWCU system lineup was later reestablished and the system returned to service. This event presented no adverse consequences to the public health and safety.

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

On February 27, 1986, the Reactor Water Cleanup (RWCU) system was being maintained in service to assist in controlling water level during vessel cooldown. The reactor mode switch was in Shutdown (less than 1% thermal power), reactor pressure was 50 psig, vessel level was 26 inches, and RWCU system inlet temperature was 303°F. At approximately 0945, control room operators observed the isolation of both RWCU system filter demineralizers on low flow, apparently due to pump cavitation. In order to prevent the RWCU system pumps from tripping on low flow, the operators immediately opened the system filter demineralizer bypass flow control valve to maintain minimum system flow.

At 1017, annunciator "RWCU System Hi Flow or Hi Space Temperature" came in concurrently with a Group III isolation signal (closing the RWCU system primary containment isolation valves), indicating a RWCU system pipe break and/or steam leak. An operator was dispatched to the RWCU area to inspect for steam leaks. No steam leaks or unusually high area space temperatures were observed. The Group III isolation was reset and the RWCU system restored to service at 1126.

An evaluation of these events indicates the following:

1. Lower than normal vessel water level for shutdown conditions apparently contributed to the loss of adequate RWCU pump net positive suction head and subsequent pump cavitation. Vessel level was 26 inches during the event and recommended range is 40-50 inches.

2. Decreased RWCU pump flow due to pump cavitation caused the isolation of both RWCU system filter demineralizers on low flow.

3. Excessive filter demineralizer bypass flow contributed to pump suction saturation conditions resulting in suction line flashing.

4. Flashing in the RWCU pump suction piping tripped the RWCU system Hi Flow (less than or equal to 200%) instrumentation resulting in a Group III isolation.

Previous plant operating experience has indicated that a very small margin exists for RWCU pump net positive suction head during modes of operation where feedwater is not available to enhance recirculation suction line subcooling.

A change to the appropriate operating procedures will be made to identify the need to maintain vessel level in the recommended range (40-50 inches) during plant conditions which could cause this type of isolation.

This event had no effect on the public health and safety, and has no generic implications.

Nebraska Public Power District

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CNSS860222

March 27, 1986

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 86-004 is forwarded as an attachment to this letter.

Sincerely,

G. R. Horn
Division Manager of
Nuclear Operations

GRH:lb
Attach.
cc: R. D. Martin
L. G. Kuncl
J. D. Weaver
L. R. Berry
INPO Records Center
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