



Nebraska Public Power District

COOPER NUCLEAR STATION
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NLS940075

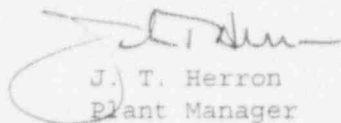
October 19, 1994

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

Dear Sir:

Cooper Nuclear Station Licensee Event Report 94-022 is forwarded as an attachment to this letter.

Sincerely,



J. T. Herron
Plant Manager

JTH/nr

Attachment

cc: L. J. Callan w/attachment
G. R. Horn w/attachment
J. H. Mueller w/attachment
R. G. Jones w/attachment
R. A. Sessoms w/attachment
E. M. Mace w/attachment
D. A. Whitman w/attachment
INPO Records Center w/attachment
NRC Resident Inspector w/attachment
R. J. Singer w/attachment
CNS Training w/attachment
CNS Quality Assurance w/attachment

9410250305 941019
PDR ADDCK 05000298
S PDR

Powerful Pride in Nebraska

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH
THIS INFORMATION COLLECTION REQUEST: 50.0 HRS.
FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO
THE INFORMATION AND RECORDS MANAGEMENT BRANCH
(MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION,
WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK
REDUCTION PROJECT (3150-0104), OFFICE OF
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.FACILITY NAME (1)
COOPER NUCLEAR STATIONDOCKET NUMBER (2)
05000298PAGE (3)
1 OF 4TITLE (4) Failure to properly perform Technical Specification
surveillance requirements due to procedure inadequacy

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 NAME	DOCKET NUMBER
09	19	94	94	-- 022 --	00	10	19	94	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		0	20.402(b)			20.405(c)			50.73(a)(2)(iv)	73.71(b)
			20.405(a)(1)(i)			50.36(c)(1)			X 50.73(a)(2)(v)	73.71(c)
			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)	OTHER
			20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
			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
Alan J. Horn Staff Support Engineer, Nuclear Licensing
& SafetyTELEPHONE NUMBER (Include Area Code)
(402) 825-3811

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)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 19, 1994, it was determined that the Technical Specification (TS) maximum flow limitation for the Low Pressure Coolant Injection (LPCI) system was not adequately proven by the existing surveillance procedure, SP 6.3.5.1. The maximum flow specified in TS 4.5.A.3.d is 8400 gpm for single pump operation with system head equivalent to a reactor pressure of 20 psid above drywell pressure with water level below the jet pumps. SP 6.3.5.1 adjusts flow using RHR-MO-34A(B) and verifies pump performance is above that required to inject 7700 gpm (and 15,000 gpm for two pumps running) into the vessel at 20 psid. The testing did not verify pump performance would exceed that required to limit the one pump flow to less than 8400 gpm. When found, the plant was in Cold Shutdown with the Residual Heat Removal (RHR) System in the Shutdown Cooling mode of operation.

The root cause for non-compliance with the Technical Specification requirement was due to misunderstanding the TS flow limitations and assuming the design of the system, with orifice plates in the pump discharge lines, would limit maximum flow. (NUREG-1022, cause code E, "Management/Quality Assurance Deficiency.")

Corrective actions will include a surveillance procedure change to incorporate the proper test configuration for testing the LPCI flow under the TS surveillance restrictions. Additionally, a surveillance testing validation program is in progress to study and review Technical Specification surveillance requirements.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION		05000298		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
				94	-- 022 --	00	

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

Plant Status

The plant was in Cold Shutdown with the Reactor Coolant System temperature approximately 110 degrees Fahrenheit and the Residual Heat Removal (RHR) System in the Shutdown Cooling mode of operation when it was determined that the required surveillance was not being fulfilled.

Event Description

On September 19, 1994, it was determined that the Technical Specification (TS) maximum flow limitation for the Low Pressure Coolant Injection (LPCI) system was not adequately proven by the existing surveillance procedure, SP 6.3.5.1. The maximum flow specified in TS 4.5.A.3.d is 8400 gpm for single pump operation with system head equivalent to a reactor pressure of 20 psid above drywell pressure with water level below the jet pumps. SP 6.3.5.1 adjusts flow using RHR-MO-34A(B) and verifies pump performance is above that required to inject 7700 gpm (and 15,000 gpm for two pumps running) into the vessel at 20 psid. The testing did not verify pump performance would exceed that required to limit the one pump flow to less than 8400 gpm. This test takes pump suction from the suppression pool and returns it to the suppression pool. Note: The Cooper Nuclear Station LPCI system consists of two loops with two pumps per loop.

Safety Significance

The Technical Specification surveillance requirement for a maximum single LPCI pump flow is intended to prevent pump damage resulting from pump runout that could adversely affect long term containment cooling needs. A plant modification in 1976, based on a recommendation by General Electric, installed an orifice plate in the discharge line for each pump in order to limit maximum flow. Post-installation testing demonstrated that pump flow was limited as designed and would prevent runout and pump damage. Subsequent system modification work found no sign of wear on the original orifice plates after 14 to 17 years of operation. This indicates there would have been little or no change in flow (increase) through the orifice plates from the original, post-installation-tested, maximum flow. New orifice plates to satisfy additional design modifications have been installed and tested, and, similarly, their flow characteristics are not expected to change over time since they are made of the same material as those installed by the 1976 modification. Thus, the safety significance of not specifically testing for maximum flow is minimal.

This condition has existed since the LPCI pump discharge orifice plates were originally installed. However, the safety implications of not specifically testing for the maximum single pump flow are minimal since the tests performed after the orifice plates were installed proved that the maximum flow was restricted to a level that prevented pump damage and subsequent inspections of the original orifice plates indicated that no increase in flow through the plates would be expected.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
COOPER NUCLEAR STATION	05000298	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		94	-- 022 --	00	

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

Cause

The root cause for non-compliance with the Technical Specification surveillance requirements was due to a misunderstanding of the TS surveillance requirement. It was assumed that the system was designed to limit the maximum LPCI flow with the orifice plate in the discharge line for each LPCI pump. Therefore, testing that LPCI flow was greater than the minimum was considered to meet the requirements.

Corrective Action

Design Change acceptance testing performed after the present orifice plates were installed proved that the maximum flow obtainable for each pump is limited to a value where there is no potential for pump damage due to runout.

A change to the surveillance procedure (SP 6.3.5.1) to satisfy Technical Specification surveillance requirement 4.5.A.3.d for pump flow will be completed and performed prior to startup from the present outage.

In addition, a Cooper Nuclear Station Surveillance Testing Validation Program is in progress to study and review surveillances with Technical Specification criteria and verify that component/system testing provides assurance the intended design functions can be met.

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COOPER NUCLEAR STATION	05000298	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		94	-- 022 --	00	

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

Similar Events

LER 85-001: Surveillance procedure did not specify exact plant conditions necessary to ensure valid Secondary Containment Leak Test.

LER 85-014: Surveillance procedure did not specify correct plant conditions to properly satisfy revised APRM TS surveillance requirements.

LER 93-011: Surveillance procedure for performance of the Secondary Containment leak rate test did not require checks for interaction of other building HVAC systems necessary to ensure valid Secondary Containment Leak Test.

LER 93-020: H2/O2 monitors had not been leak tested in accordance with Technical Specification requirements.

LER 94-009: Inadequate load shed and logic system surveillance testing. (Root cause still under investigation as of the date of this LER.)