Nebraska Public Power District

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NLS960032

February 12, 1996

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Dear Sir:

Cooper Nuclear Station Licensee Event Report 95-022, Supplement 1 is forwarded as an attachment to this letter.

Sincerely,

J. T. Herron
Plant Manager

/cct

Attachment

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

NPG Distribution

INPO Records Center

W. Turnbull
MidAmerica Energy

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NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
COOPER NUCLEAR STATION	05000298	1 OF 4

TITLE (4)

Reactor Trip Signal, ESF Actuation, and Loss of Shutdown Cooling During Maintenance Activity

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
12	13	95	95	-- 022 --	01	02	12	96	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	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Calvin C. Taylor, Licensing and Compliance Specialist	(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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At 1658 CST, on December 13, 1995, while in cold shutdown for a refueling outage, a reactor vessel low water level signal was received due to Instrument and Control technicians backfilling a common variable leg for Reactor Vessel Water Level instrumentation. The low level signal resulted in a reactor trip signal, isolation and temporary loss of the Shutdown Cooling mode of the Residual Heat Removal System (Group 2), and isolation of the Secondary Containment and initiation of the Standby Gas Treatment System (Group 6). The Reactor Water Cleanup System (Group 3) was isolated when the event occurred. At 1706, the reactor trip signal was reset, at 1707, Groups 2,3, and 6 isolations were reset, and at 1724, Shutdown Cooling was restored after a reactor water temperature increase of approximately three degrees Fahrenheit.

Previously, a work item was planned to replace the condensing pot flange gasket in the corresponding reactor vessel level instrumentation reference leg. Opening the flange resulted in draining the condensing pot. The mechanic completed replacing the gasket and Instrument and Control personnel were told to backfill the sensing line. During the performance of this backfill procedure, the invalid low signal was received.

The cause of this event is inadequate work planning and review, (NUREG 1022 Cause Code A, Personnel Error). Corrective actions include providing training to maintenance planners to enhance their ability to identify and develop post maintenance testing requirements and reviewing this event to determine possible enhancements to the maintenance planning and review process.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
COOPER NUCLEAR STATION	05000298	95	-- 022 --	01	2 OF 4

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

PLANT CONDITIONS

Cooper Nuclear Station (CNS) was in a cold shutdown condition for refueling outage, RE16. The reactor vessel was reassembled and heat removal was being accomplished with the shutdown cooling mode of the Residual Heat Removal System.

EVENT DESCRIPTION

At 1100 CST on December 12, 1995, Engineering identified the potential for an improper gasket to be installed on the one inch reactor pressure vessel head condensing pot line flange. A maintenance work request (MWR) package was completed prior to the next day shift in order to replace the flange gasket and the Shift Supervisor signed for authorization to commence work at 1418 on December 13, 1995.

At 1529, the control room staff noticed indication of vessel level on the shutdown and steam nozzle range reactor vessel level instruments, NBI-LI-86 and NBI-LI-92, reading upscale high. It was later learned that the mechanic had loosened the bolts on the flange which resulted in draining the condensing pot. The mechanic continued with and completed the gasket change-out.

After learning the cause of the erroneous level indication, the Shift Supervisor discussed the situation with the outage manager. The outage manager contacted maintenance planning to revise the MWR to include backfilling the sensing line and also informed the Instrument and Control (IAC) shop crew leader that Reference Leg 1A would require backfill.

The IAC technicians were uncertain over the high/low variable/reference leg configuration for this dP cell and since the procedure had steps for filling both sides of a dP cell, the technicians decided to fill both the high and low sides. They contacted the IAC crew leader to determine if any other instruments would be affected. The IAC crew leader misread the print and incorrectly informed them that there were not any other instruments that could be affected and the IAC technicians proceeded to fill the variable leg.

A control room operator noticed NBI-LI-94A and C were upscale and informed the IAC technicians of the indication. The IAC technicians looked at NBI-LIS-101A and B and noted them upscale. An IAC technician closed the demineralized water valve causing a drop in flow pressure with a subsequent down scale indication and activation of NBI-LS-101A and B. At 1658, the Reactor Vessel Water Low signal was initiated from a 2/4 logic and resulted in a reactor trip signal (with all rods previously fully inserted) and Groups 2, 3, and 6 isolations. The group isolations resulted in isolation and temporary loss of the Shutdown Cooling mode of the Residual Heat Removal System (Group 2) and isolation of the Secondary Containment and initiation of the Standby Gas Treatment System (Group 6). The Reactor Water Cleanup System (Group 3) was already isolated when the event occurred. At 1706, the reactor trip signal was reset, at 1707, Groups 2,3, and 6 isolations were reset, and at 1724, Shutdown Cooling was restored after a reactor water temperature increase of approximately three degrees Fahrenheit from 110 to 113.

CAUSE

The cause of this event is inadequate work planning and review, (NUREG 1022 Cause Code A, Personnel Error) in that the scope of the maintenance activity was not identified in the work control documents for backfilling the reference leg.

Personnel involved in work package development did an inadequate job in specifying post maintenance testing requirements in that backfilling the reference line was not included in the original work package. Reviews of the work package did not consider existing plant conditions and the need for backfilling the sensing line due to improper assumptions and the lack of verification and validation of information. The revised work package to backfill did not properly address the scope of maintenance to be performed and the reviewers improperly assumed that the revised work package was for backfilling the reference leg only.

SAFETY SIGNIFICANCE

The safety significance of this specific event is low. Although a number of errors were made throughout the sequence of events, the cause of the loss of shutdown cooling was identified and corrected with only a three degree increase in process temperature. If the event had occurred with a higher decay heat load, the operators could have promptly restored shutdown cooling.

CORRECTIVE ACTIONS

Immediate actions taken included:

1. The Plant Manager stopped work and conducted a briefing for plant personnel on the event, the importance of "stopping in the face of uncertainty," and recognizing opportunities to prevent similar problems.

2. The CNS outage newsletter was used to disseminate lessons learned from the event.

Corrective actions to prevent recurrence of this event and similar events include:

1. Training will be provided to maintenance planners to enhance their ability to identify and develop post maintenance testing requirements.

2. The CNS Maintenance Manager will initiate a review of this event to determine possible enhancements to the maintenance planning and review process.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
COOPER NUCLEAR STATION	05000298	95	-- 022 --	01	4 OF 4

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

SIMILAR EVENTS

LER 88-015 ESF Group Isolations occurred while preparing for acceptance testing of newly installed NBI-LT-92. Venting of the LT was being accomplished by opening the transmitter vent. The variable leg also serves several other LTs which resulted in NBI-LIS-101A and B activating the Reactor Vessel Water Low Level signal. Cause was attributed to a procedural deficiency in that no specific guidance was provided reflecting the steps or possible interactions that could occur during the process. The event was reviewed with design engineers in regards to providing detailed instructions for installation/acceptance testing. The LER was routed to IAC and Engineering supervisors to promote dissemination of the information regarding this event to their personnel.

LER 89-002 ESF group isolations occurred while investigating a two inch deviation between Reactor Vessel level indicators. An IAC tech was attempting to valve a dP test instrument into the loop as part of the investigative process. The test instrument used was incorrect for the intended application and upon being placed in service, an instrument reference leg pressure transient resulted in two level switches in two separate RPS channels to trip. Cause was inadequate job planning wherein the specific steps and equipment to be used were not well defined. Additionally, an apparent lack of concentration on the task being performed by the involved personnel contributed to the event. The event was discussed with all IAC personnel during a shop seminar, identifying the shortcomings associated with the event as initially planned versus the subsequent successful plan. The lessons learned from the event were incorporated into appropriate training programs.

Correspondence No: NLS960032

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
Training will be provided to maintenance planners to enhance their ability to identify and develop post maintenance testing requirements.	July 23, 1996
The CNS Maintenance Manager will initiate a review of this event to determine possible enhancements to the maintenance planning and review process.	April 20, 1996