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NLS2003047
May 14, 2003

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

Subject: Licensee Event Report No. 2003-003
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

The subject Licensee Event Report is forwarded as an enclosure to this letter.

Sincerely,

John Christensen for

J. A. Hutton
Plant Manager

/rar
Enclosure

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

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NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)	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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
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4. TITLE
Failure to Evaluate Heat-up Rate Leads to Technical Specification Prohibited Operation

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
04	10	2000	2003 –	003 –	00	05	14	2003	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	4
10. POWER LEVEL	000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	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)		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)		

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Paul Fleming, Licensing and Regulatory Affairs Manager	(402) 825-2774

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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

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

On April 10, 2000, during performance of the ASME Class 1 System Leakage Test surveillance procedure for refuel outage RE-19, the Technical Specification (TS) limit for Reactor Coolant System (RCS) heat-up rate was exceeded in Reactor Recirculation (RR) [EIIS:AD] loop B. The failure to meet TS Surveillance Requirement acceptance criteria was not recognized, and the required evaluation to determine if the RCS is acceptable for operation was not performed prior to start up from the RE-19 refuel outage. On March 20, 2003, with Cooper Nuclear Station (CNS) in Mode 5 (Refueling) for refuel outage RE-21, a review of the surveillance procedure and past performance of the procedure was performed in support of a modification to replace temperature recorders. During this review the above condition was discovered.

This event was the result of inadequate procedural guidance for equalizing RCS temperatures in preparation for starting an idle RR pump, and evaluating available RCS temperature data.

Appropriate procedure revisions were completed by April 4, 2003, and the required evaluation was completed on April 12, 2003. Additional corrective actions are being evaluated and tracked by the CNS Corrective Action Program.

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

PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 5 (Refueling) for refuel outage RE-21 when this condition was discovered. CNS was in Mode 4 (Cold Shutdown) for refuel outage RE-19 when the event occurred.

BACKGROUND

All components of the Reactor Coolant System (RCS) are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heat-up) and shutdown (cool-down) operations, power transients, and reactor trips. Technical Specification Limiting Conditions for Operation (LCOs) limit the pressure and temperature changes during RCS heat-up and cool-down, within the design assumptions and the stress limits for cyclic operation.

The specification contains Pressure/Temperature limit curves for heat-up, cool-down, and inservice leakage and hydrostatic testing, criticality, and data for the maximum rate of change of reactor coolant temperature. These operating limits provide a margin to brittle failure of the reactor vessel [EIIS:RCT] and piping of the reactor coolant pressure boundary.

The consequence of exceeding the specification limits is that the RCS has been operated under conditions that can result in brittle failure of the reactor pressure vessel, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect of the event on the structural integrity of the RCS boundary components.

If the heat-up limits are exceeded during Mode 4 or 5, the required evaluation must be performed prior to entering Mode 3 (Hot Shutdown) or Mode 2 (Startup).

EVENT DESCRIPTION

On April 10, 2000, during performance of the ASME Class 1 System Leakage Test surveillance procedure for refuel outage RE-19, the Technical Specification (TS) limit for Reactor Coolant System (RCS) heat-up rate was exceeded in Reactor Recirculation (RR) [EIIS:AD] loop B. The failure to meet TS Surveillance Requirement acceptance criteria was not recognized, and the required evaluation to determine if the RCS is acceptable for operation was not performed prior to start up from the RE-19 refuel outage. On March 20, 2003, with Cooper Nuclear Station (CNS) in Mode 5 (Refueling) for refuel outage RE-21, a review of the surveillance procedure and past performance of the procedure was performed in support of a modification to replace temperature recorders. During this review the above condition was discovered.

The failure to meet surveillance requirement acceptance criteria occurred during heat-up and starting of the idle Reactor Recirculation (RR) [EIIS:AD] loop. With one loop of RR in service, the Residual Heat Removal (RHR) system operating in Shutdown Cooling (SDC) mode with the heat exchanger bypassed was used to add heat to the RCS in preparation for the System Leakage Test. Additional procedure steps require securing RHR SDC, and placing the idle RR loop in service.

To ensure TS requirements related to temperature difference between the reactor coolant temperature in the RR loop to be started and the Reactor Pressure Vessel coolant temperature, warming the idle RR loop must be performed. Warming the idle RR loop is accomplished by throttling open the loop

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

discharge valve to induce a limited flow in the loop piping. It was not recognized that the combined effect of warming the idle loop and starting of the idle loop pump, which equalized the coolant temperature, exceeded the limits established as acceptance criteria for the surveillance requirement.

Technical Specifications require the heat-up rate to be less than or equal to 100 degrees Fahrenheit (F) when averaged over a one hour period. The actual heat-up rate for the idle RR loop was approximately 120 degrees F averaged over one hour.

The required evaluation was completed on April 12, 2003. The evaluation concluded that the RCS is acceptable for operation.

BASIS FOR REPORT

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B) as "any operation or condition prohibited by the plant's Technical Specifications."

CAUSE

Two causes of this event were identified. The procedures which direct the performance of the ASME Class 1 System Leakage Test, and the operation of the RR system lacked explicit guidance to monitor and control RR loop inlet temperature of the idle loop. The second cause is the lack of a methodical process to calculate the RCS heat-up rate, including the RR loops, resulted in not having the data required to identify an excessive heat-up rate and alert the operator.

SAFETY SIGNIFICANCE

Based on post-event analysis, the risk significance of exceeding the RR Loop B heat-up rate did not adversely effect, directly nor indirectly the CNS risk as described by the probabilistic risk assessment as established by the baseline reliability of components or equipment. The condition did not challenge a fuel, reactor coolant pressure, primary containment, or secondary containment boundary. The condition did not impact the plant's ability to safely shutdown or maintain the reactor in a safe shutdown condition. In addition, analysis has established that the condition did not compromise the plant design requirements for safety functions or important to safety component functions.

CORRECTIVE ACTIONS

Immediate Actions

1. ASME Class 1 System Leakage Test surveillance procedure was placed on Administrative Hold on March 20, 2003, to prevent recurrence of the event. Revisions to the surveillance procedure and system operating procedure were issued by April 4, 2003, with enhanced guidance for control of the idle RR Loop temperature.

2. The Technical Specification required evaluation to demonstrate that the RCS is acceptable for operation was completed on April 12, 2003.

Long Term Actions

A new surveillance procedure to monitor and calculate RCS heat-up and cool-down rates was issued on April 21, 2003.

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PREVIOUS EVENTS

There have been no previous events associated with heat-up limits being exceeded during the ASME Class 1 System Leakage Test.

LER 94-015-02 reported two separate events where the reactor vessel bottom head drain, the vessel bottom head, and the vessel above skirt junction exceeded cool-down limits subsequent to plant trips on December 14, 1993 and March 2, 1994. Corrective actions associated with this event included operator requalification training and a Software Design Change Request to develop and implement software to calculate the required data enabling faster reactor recirculation pump recovery. A dynamic computer display in the control room provides the data to the operators.

Three previous reportable events attributed to procedural problems have occurred in recent years.

LER 2000-009-00, Failure to Recognize Entry Condition for Limiting Condition for Operation 3.4.5 Condition D Causes Plant Operation in Violation of Technical Specification, was attributed to inadequate procedural requirements for a timely independent verification of LCO entries. Corrective actions included Operations Management providing procedural intent clarification to Control Room personnel. Station documents were revised to detail the requirement to complete an independent verification of LCO entries prior to beginning work.

LER 2001-003-00, Failure to Adequately Revise Procedures Resulted in Inadequate Fire Watches Under Certain Battery/Battery Charger Configurations and an Unanalyzed Condition, was the result of not appropriately incorporating requirements into procedures. Corrective actions included revision to appropriate plant procedures to require fire watches in the necessary fire zones whenever the "C" battery charger is substituting for the "B" charger.

LER 2002-001-01, Loss of High Pressure Coolant Injection Safety Function Due to Gland Seal Condenser High Level Annunciation, was attributed to the procedure change process which allowed inappropriate guidance to be incorporated into a procedure. Process improvements since 1993 have corrected this deficiency. The alarm response procedure was revised to remove the step to inhibit High Pressure Coolant Injection which caused this event.

Correspondence Number: NLS2003047

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
Revisions to the surveillance procedure and system operating procedure were issued with enhanced guidance for control of the idle RR Loop temperature.	Complete
Cooper Nuclear Station has implemented a new surveillance procedure to monitor and calculate RCS heat-up and cool-down rates.	Complete