



**Nebraska Public Power District**

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NLS2009098  
December 29, 2009


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

Subject: Licensee Event Report No. 2009-001-00  
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Dear Sir or Madam:

The purpose of this correspondence is to forward Licensee Event Report 2009-001-00.

Sincerely,

  
Demetrius L. Willis  
General Manager of Plant Operations

/jf

Enclosure

cc: Regional Administrator w/enclosure USNRC - Region IV	NPG Distribution w/enclosure
Cooper Project Manager w/enclosure USNRC - NRR Project Directorate IV-1	INPO Records Center w/enclosure
Senior Resident Inspector w/enclosure USNRC - CNS	SORC Administrator w/enclosure
SRAB Administrator w/enclosure	CNS Records w/enclosure

# 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: 80 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> Cooper Nuclear Station	<b>2. DOCKET NUMBER</b> 05000298	<b>3. PAGE</b> 1 of 4
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**4. TITLE**  
Disarmed Control Rod Technical Specification Requirements Not Met

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	01	2009	2009	- 001 -	00	12	29	2009	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

<b>9. OPERATING MODE</b> 4	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)											
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)								
<b>10. POWER LEVEL</b> 000	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)								
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)								
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)								
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)								
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)								
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)								
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER								
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A								

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME David W. Van Der Kamp, Licensing Manager	TELEPHONE NUMBER (include Area Code) (402) 825-2904
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE). <input checked="" type="checkbox"/> NO				

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

On November 1, 2009 at 0746 Central Standard Time, Operations personnel determined the requirements of Technical Specifications (TS) Limiting Condition for Operation 3.10.4, Single Control Rod Withdrawal-Cold Shutdown, were not met when it was discovered the control rods in the five by five (5x5) array around control rod 50-19 had been rearmed and the clearance order released. Cooper Nuclear Station was in day 37 of refueling outage RE25, Mode 4, Cold Shutdown operation. Control rod 50-19 was being returned to service after replacement of its control rod drive mechanism (CRDM) O-ring seal with the control rod still withdrawn and uncoupled from its CRDM at the time of discovery. The cause of the error is attributed to inadequate programmatic controls for maintaining configuration control of the 5x5 array. Immediate actions were taken to restore compliance with TS until control rod 50-19 was restored to operability. Actions to preclude recurrence include revising appropriate procedures and communicating management expectations for clearance order activities. This event is considered to have negligible safety significance.

## LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Cooper Nuclear Station	05000298	YEAR	SEQUENTIAL NUMBER	REVISION	2 of 4
		2009	- 001	- 000	

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

### PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 4, Cold Shutdown, at the time of discovery in refueling outage RE25.

### BACKGROUND

The Reactor Manual Control System permits operational manipulation of the control rods. The system includes interlocks that inhibit rod movement (rod block) under certain conditions. The Reactor Mode Selector Switch has several operational positions enabling and/or inhibiting control rod movement. With the Reactor Mode Selector Switch in the refuel position, the analyses for control rod withdrawal during refueling are applicable and, provided the assumptions of these analyses are satisfied in Mode 4, these analyses will bound the consequences of an accident. The refueling interlocks, in combination with core nuclear design and refueling procedures, limit the probability of an inadvertent criticality. These interlocks prevent the withdrawal of more than one control rod. Under these conditions, since only one control rod can be withdrawn, the core will always be shut down even with the highest worth control rod withdrawn if adequate shut down margin exists.

The control rod scram function provides backup protection in the event normal refueling procedures and the refueling interlocks fail to prevent inadvertent criticalities during refueling. Alternate backup protection can be obtained by ensuring that a five by five (5x5) array of control rods, centered on the withdrawn control rod, are inserted and incapable of withdrawal. This alternate backup protection is required when removing a control rod drive because this removal renders the withdrawn control rod incapable of being scrambled.

### EVENT DESCRIPTION

On November 1, 2009 at 0746 Central Standard Time (CST), Operations personnel determined the requirements of Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.10.4, Single Control Rod Withdrawal-Cold Shutdown, were not met when it was discovered the control rods in the 5x5 array around control rod 50-19 had been rearmed and the clearance order released. CNS was in day 37 of refueling outage RE25, Mode 4, Cold Shutdown operation. Control rod 50-19 was being returned to service after replacement of its control rod drive mechanism (CRDM) O-ring seal with the control rod still withdrawn and uncoupled from its CRDM at the time of discovery.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Cooper Nuclear Station	05000298	YEAR	SEQUENTIAL NUMBER	REVISION	3 of 4
		2009	- 001	- 000	

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The Outage Control Center narrative log documented the CRDM flange bolts were torqued at 0333 CST, the clearance order tags for the control rods in the 5x5 array were authorized for release at 0405 CST, and signed as released at 0552 CST. Prior to and during the CRDM maintenance, TS LCO 3.10.4 requirements were met. However, the requirements of TS LCO 3.10.4 for having control rod 50-19 withdrawn in Mode 4 required either the control rod to be operable or the control rods in a 5x5 array around the inoperable control rod to be disarmed.

A control rod is disarmed by disconnecting its Amphenol connector at the Control Rod Drive System [EIS: AA] Hydraulic Control Unit [EIS: HCU]. The control rods in the 5x5 array centered on control rod 50-19 were rearmed by connecting the Amphenol connectors on the control rods before control rod 50-19 had been recoupled to its CRDM and declared operable. Upon discovery, compliance with TS LCO 3.10.4 was re-established by disconnecting the Amphenol connectors to disarm the control rods in the 5x5 array and a clearance order hung until control rod 50-19 was recoupled and made operable.

Investigation into the event identified that the assigned Senior Reactor Operator (SRO) did not recognize the 5x5 array requirement existed for this maintenance activity while in Mode 4. Consequently, the SRO treated the task like CRDM work in Mode 5-Refueling, where the 5x5 array requirement was not applicable. No specific procedure guidance existed for the clearance order method to be used for this configuration. The need for maintaining the 5x5 array was not adequately communicated to the assigned SRO during turnover; therefore, the SRO misunderstood a notation on the clearance order regarding use of the temporary lift process. The Work Control Center SRO authorizing release of the 5x5 array clearance order did not validate the operational impact of its release as directed by the tagout procedure. While not a specific requirement, the authorizing SRO also did not use the available checklist for authorizing the clearance order release and consequently did not inform the Control Room of the clearance order release.

**BASIS FOR REPORT**

This event is being reported as an operation or condition prohibited by plant TS per 10 CFR 50.73(a)(2)(i)(B). Although CNS took actions in accordance with the TS once the condition was discovered, the condition that the TS prohibited had existed for up to four hours. The applicable actions required by the TS are required to be taken immediately.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION	
Cooper Nuclear Station	05000298	2009	--	001	4 of 4
		--		000	

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**SAFETY SIGNIFICANCE**

This non-compliance with the TS is considered to have negligible safety significance. Unacceptable reactivity excursions were always precluded through compliance with other aspects of TS LCO 3.10.4. Specifically, all other control rods were fully inserted and a control rod withdrawal block was inserted. Therefore, reactivity excursions were prevented and the reactor remained within analyzed conditions for a single control rod being withdrawn. Additionally, adequate shutdown margin was maintained even if the next strongest rod was withdrawn.

**CAUSE**

The root cause of this event is that programmatic controls in place were inadequate to maintain configuration control of the control rods in the five by five array required by TS LCO 3.10.4 while in Mode 4.

**CORRECTIVE ACTION**

The following corrective actions will be taken and tracked in the CNS corrective action program:

1. Revise the controlling surveillance procedure used to withdraw the control rod during Mode 4 or 5 operation to ensure a clearance order is controlling configuration of the five by five array requirement separate from the maintenance clearance order.
2. Revise a conduct of operations procedure to include use of separate clearance orders for maintenance and configuration control of components specified by TS conditions and required actions.
3. Revise the tagout procedure to add a requirement to use the Clearance Order Approval Checklist when authorizing a clearance order for hang and release activities.
4. Communicate management expectations to Operations Department personnel stressing the importance of informing the Control Room of all clearance order hang and release activities.

An interim action is in place for controlling configuration of equipment involving TS LCOs of control rods, primary containment isolation valves and secondary containment isolation valves until the listed actions have been completed.

**PREVIOUS EVENTS**

There have been no related reportable events.

Correspondence Number: NLS2009098

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 Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		