



NOV 15 2010

Serial: HNP-10-127  
10 CFR 50.73

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63  
LICENSEE EVENT REPORT 2010-003-00

Ladies and Gentlemen:

The enclosed Licensee Event Report (LER) 2010-003-00 is submitted in accordance with 10 CFR 50.73, paragraph (a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specification. This report describes an event in which the plant operated under a Technical Specification prohibited condition by exceeding the Allowed Completion Time for an Inoperable Refueling Water Storage Tank. In accordance with 10 CFR 50.73(a) requirements, this LER is submitted within 60 days following the event.

This document contains no new Regulatory Commitments.

Please refer any questions regarding this submittal to Mr. John Caves, Supervisor - Licensing/Regulatory Programs, at (919) 362-3137.

Sincerely,

Kelvin Henderson  
Plant General Manager  
Harris Nuclear Plant

KH/kab

Enclosure

cc: Mr. J. D. Austin, NRC Sr. Resident Inspector, HNP  
Mrs. B. L. Mozafari, NRC Project Manager, HNP  
Mr. L. A. Reyes, NRC Regional Administrator, Region II

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<b>NRC FORM 366</b> (10-2010)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 10/31/2013								
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)				Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects.resource@nrc.gov">infocollects.resource@nrc.gov</a> , 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 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> Harris Nuclear Plant - Unit 1				<b>2. DOCKET NUMBER</b> <div style="display: flex; justify-content: space-around;"> <span>05000</span> <span>0400</span> </div>		<b>3. PAGE</b> <div style="display: flex; justify-content: space-around;"> <span>1</span> <span>OF</span> <span>3</span> </div>								
<b>4. TITLE</b> Condition prohibited by Technical Specifications when non-seismic system was aligned to Refueling Water Storage Tank														
<b>5. EVENT DATE</b>			<b>6. LER NUMBER</b>			<b>7. REPORT DATE</b>			<b>8. OTHER FACILITIES INVOLVED</b>					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER				
09	16	2010	2010	- 003	- 00	11	15	2010	N/A	05000				
									FACILITY NAME	DOCKET NUMBER				
									N/A	05000				
<b>9. OPERATING MODE</b>  <div style="text-align: center; font-size: 24pt;">1</div>			<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>											
<b>10. POWER LEVEL</b>  <div style="text-align: center; font-size: 24pt;">100</div>			<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)		
			<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)(vii)(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)(vii)(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					
<b>12. LICENSEE CONTACT FOR THIS LER</b>														
FACILITY NAME John Caves - Supervisor, Licensing/Regulatory Programs									TELEPHONE NUMBER (Include Area Code) 9193623137					
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>														
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	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 15. EXPECTED SUBMISSION DATE)						<input checked="" type="checkbox"/> NO								
<b>ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)														
<p>On March 3, 2006, procedure OP-116.01, Fuel Pool Purification System, was revised to permit purification of the Refueling Water Storage Tank (RWST) using the non-seismic Fuel Pool Purification system in Modes 1-4 without declaring the RWST inoperable and entering the Technical Specification (TS) Limiting Condition for Operation (LCO) action statement. In 2010, the NRC Resident Inspector questioned this practice, which led to the conclusion that Harris Nuclear Plant should have obtained prior NRC approval to perform this activity. The root cause investigation concluded that ambiguous procedural guidance resulted in a misinterpretation of requirements. Corrective actions include procedure revisions to eliminate RWST purification in Modes 1-4 and clarification of guidance regarding the impact of proposed activities on the design and licensing bases.</p>														

LICENSEE EVENT REPORT (LER)<sup>U.S. NUCLEAR REGULATORY COMMISSION</sup>  
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Harris Nuclear Plant - Unit 1	05000 400	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
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## NARRATIVE

## EVENT DESCRIPTION

The Refueling Water Storage Tank (RWST) is seismically-qualified, safety-related and within the scope of plant Technical Specifications (TS). Plant design includes the capability of using the Fuel Pool Purification System for cleanup of the RWST. The Fuel Pool Purification System is a non-safety, non-seismic system and is separated from the RWST by a normally closed, safety-related, manually-operated boundary valve 1CT-23.

On March 3, 2006, procedure OP-116.01, Fuel Pool Purification System, was revised to permit purification of the RWST in plant operating Modes 1-4 without declaring the RWST inoperable and entering the TS Limiting Condition for Operation (LCO) action statement. The alignment for purification of the RWST opens manual valve 1CT-23, RWST to the Spent Fuel Pool (SFP) Pump suction valve, which un-isolates safety and seismic piping from non-safety piping. The 10CFR50.59 evaluation supporting the procedure revision credited a manual action to shut 1CT-23 to maintain operability of the system. The evaluation concluded that a license amendment was not required to implement the procedure change.

In 2010, the NRC Resident Inspector at Harris Nuclear Plant (HNP) questioned this practice. HNP placed a caution tag on valve 1CT-23 to prevent operation of the valve until the question was resolved. A discussion was held between the plant staff and the NRC Nuclear Reactor Regulation staff. During that discussion, plant staff realized that HNP should have obtained prior approval from the NRC to perform this activity without entering the TS LCO action statement. The condition was entered into the corrective action program and the procedure was revised to prevent the activity without entering the action statement.

TS LCO 3.1.2.6 Action (b) requires "with the RWST inoperable, restore the tank to Operable status within 1 hour or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours." Since the RWST was not declared inoperable, TS LCO actions were not entered. This resulted in a condition prohibited by TSs. Purification of the RWST while online in Modes 1-4 from August 16, 2007, through August 16, 2010, occurred for approximately 91 hours in 2008, 30 hours in 2009, and 24 hours in 2010.

## SAFETY CONSEQUENCES

Sensitivity calculations show that with the RWST considered out of service during the cleanup period (72 hours) the increase in core damage frequency due to a seismic event is  $1.50\text{E-}8/\text{yr}$ . The result is considered very low risk.

## CAUSE OF EVENT

A 10CFR50.59 evaluation failed to identify that opening valve 1CT-23, RWST to SFP pump suction valve, when purifying the RWST online would require declaring the RWST inoperable regardless of what controls could be put into place to close the valve. Ambiguous procedural guidance resulted in a misinterpretation of requirements when performing the 10CFR50.59 evaluation for procedure OP-116.01.

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## NARRATIVE

## CAUSE OF EVENT (continued)

NEI 96-07 Revision 1 states: Although this criterion allows minimal increases, licensees must still meet applicable regulatory requirements and other acceptance criteria to which they are committed (such as contained in regulatory guides and nationally recognized industry consensus standards, e.g., the ASME B&PV Code and IEEE standards). Further, departures from the design, fabrication, construction, testing and performance standards as outlined in the General Design Criteria (Appendix A to 10 CFR 50) are not compatible with a "no more than minimal increase" standard.

Because the RWST is required to be seismically-qualified, opening 1CT-23 to connect the Fuel Pool Purification System (non-seismic) to the RWST resulted in a deviation from GDC 2. The change should have been considered "more than a minimal increase" which requires prior NRC approval to perform the activity.

## CORRECTIVE ACTIONS

## Immediate Corrective Actions

Revised procedure OP-116.1, Fuel Pool Purification System, to remove the capability to purify the RWST in Modes 1-4.

## Actions to Prevent Recurrence

Clarify procedural guidance regarding the impact of proposed activities on the design and licensing bases.

## PREVIOUS SIMILAR EVENTS

On August 1, 1996, HNP personnel identified, via a review of industry operating experience, a "condition outside the design basis". This condition was that the RWST had been connected to non-seismically qualified piping (non-seismic piping under consideration was the purification system piping and piping leading to the hydrostatic test pump). HNP reported this event to the NRC in Licensee Event Report (LER) 96-13. The cause of this LER was determined to be a failure to reconcile operating procedure lineups with the plant design basis during original procedure development. Corrective actions from that LER included placing administrative controls on 1CT-23 by locally verifying 1CT-23 shut as an immediate action and ensuring procedure requirements do not permit opening without declaring the LCO. In 2006, HNP staff concluded that subsequent changes to the industry 50.59 process under NEI 96-07 provided additional flexibility such that prior NRC approval for the activity was no longer needed. This error resulted in not entering the Technical Specification Limiting Condition for Operation action statement during the purification activity, which is a condition not allowed by Technical Specifications and requires this Licensee Event Report in accordance with 10 CFR 50.73(a)(2)(i)(B).