

United States Nuclear Regulatory Commission  
Attachment I to Serial: RNP-RA/12-0082  
4 Pages (including cover page)

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2**

**LER 2011-001-01, CONDITION PROHIBITED BY TECHNICAL SPECIFICATIONS  
WHEN NON-SEISMIC SYSTEM WAS ALIGNED TO REFUELING WATER STORAGE  
TANK DUE TO REGULATORY REQUIREMENTS NOT ADEQUATELY  
INCORPORATED IN PLANT DOCUMENTATION**

**LICENSEE EVENT REPORT (LER)**(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 Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollects.resource@nrc.gov](mailto:infocollects.resource@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 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.

**1. FACILITY NAME**

H. B. Robinson Steam Electric Plant, Unit No. 2

**2. DOCKET NUMBER**

05000261

**3. PAGE**

1 OF 3

**4. TITLE**

Condition Prohibited by Technical Specifications When Non-Seismic System was Aligned to Refueling Water Storage Tank due to Regulatory Requirements not Adequately Incorporated in Plant Documentation

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	04	2011	2011	001	01	08	01	2012		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
1	<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)(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)		
10. POWER LEVEL	<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 checked="" type="checkbox"/>	50.73(a)(2)(v)(D)	<input type="checkbox"/>	Specify in Abstract below or in NRC Form 366A		

**12. LICENSEE CONTACT FOR THIS LER**

## FACILITY NAME

M. S. Connelly

## TELEPHONE NUMBER (Include Area Code)

843-857-1569

**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

**14. SUPPLEMENTAL REPORT EXPECTED**☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO**15. EXPECTED SUBMISSION DATE**

MONTH DAY YEAR

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

On May 4, 2011, with H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in Mode 1 at 100% power, it was determined that over the last 40 years, HBRSEP, Unit No. 2, periodically performed cleanup of the Refueling Water Storage Tank (RWST) by aligning the non-seismically qualified refueling water purification system to the safety related and seismically qualified RWST without recognizing that the action rendered the RWST inoperable. As a result, on multiple occasions, the RWST was inoperable for a period longer than allowed by Technical Specification (TS) Limiting Condition for Operation 3.5.4, Emergency Core Cooling Systems – Refueling Water Storage Tank.

The cause of this event was that regulatory requirements for the separation of seismically qualified and non-qualified systems, structures, and components were not adequately incorporated into the Design Basis Document (DBD) and Updated Final Safety Analysis Report (UFSAR).

Administrative controls have been put in place on the alignment restrictions for piping that could affect the operability of the RWST. Additional corrective actions planned include DBD and UFSAR changes and modifications of applicable plant procedures.

The condition described in this Licensee Event Report is reportable in accordance with the following: 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications. 10 CFR 50.73(a)(2)(v)(D), Event or Condition that could have prevented fulfillment of a safety function.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
H. B. Robinson Steam Electric Plant, Unit No. 2	05000261	YEAR	SEQUENTIAL NUMBER	REV. NO.	2 OF 3
		2011	- 001	- 01	

**NARRATIVE****I. DESCRIPTION OF EVENT**

On May 4, 2011, with H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in Mode 1 at 100% power, it was determined that over the last 40 years HBRSEP, Unit No. 2, periodically performed cleanup of the Refueling Water Storage Tank (RWST) [TK] by aligning the non-seismically qualified refueling water purification system [KH] to the safety related and seismically qualified RWST without recognizing that the action rendered the RWST inoperable. As a result, on multiple occasions, the RWST was inoperable for a period longer than allowed by Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.4, Emergency Core Cooling Systems – Refueling Water Storage Tank, Condition B.

TS LCO 3.5.4, Action B, requires that, with the RWST inoperable for reasons other than Condition A, restore the RWST to Operable status within 1 hour or be in Mode 3 within 6 hours and Mode 5 within 36 hours, in accordance with Condition C. (Condition A pertains to inoperability associated with RWST boron concentration and temperature limits.)

During the three year period prior to May 4, 2011, it is estimated that the purification loop was in service aligned to the RWST while on-line nine times totaling 297 days.

**II. CAUSE OF EVENT**

This event was investigated using the HBRSEP, Unit No. 2, Corrective Action Program (CAP) and is documented in NCR 463557.

The NCR 463557 investigation concluded that the regulatory requirements for the separation of seismically qualified and non-qualified systems, structures, and components were not adequately incorporated into the Design Basis Document and Updated Final Safety Analysis Report (UFSAR). This is a historical condition that has existed for the life of the plant.

**III. ANALYSIS OF EVENT**

The HBRSEP, Unit No. 2, original plant design included a refueling water purification loop, consisting of a refueling water purification pump, filter, and demineralizer. The loop can be aligned to filter and demineralize either the spent fuel pool or the RWST. The refueling water purification loop is non-seismically qualified. It is normally isolated from the RWST by manual isolation valves which are within the seismically qualified boundary of the RWST.

As stated in the NCR 463557 investigation, for the first forty years of plant operation, HBRSEP, Unit No. 2, periodically aligned the refueling water purification loop to the RWST and operated the system to maintain the water quality of the RWST. This had been done in both on-line and outage conditions. During the last three years, the purification loop was in service aligned to the RWST while HBRSEP, Unit No. 2, was on-line for periods of less than 1 day to as many as 161 days.

NCR 463557 was initiated in May 2011. The investigation concluded that the regulatory requirements for the separation of seismically qualified and non-qualified systems, structures, and components were not adequately incorporated into the Design Basis Document and Updated Final Safety Analysis

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
H. B. Robinson Steam Electric Plant, Unit No. 2	05000261	YEAR	SEQUENTIAL NUMBER	REV. NO.	3 OF 3
		2011	- 001	- 01	

**NARRATIVE**

Report (UFSAR).

**IV. SAFETY SIGNIFICANCE**

The risk impact of having the RWST aligned for purification has been evaluated and determined to be of low risk impact ( $<5E-07$ ). This analysis takes into consideration the impact of internal flooding due to a pipe break, as well as the increase in risk due to a seismic event. The result of the analysis was based on having the non-seismic refueling water purification loop in service aligned to the RWST with the plant on-line for a conservative estimate of approximately 5000 hours per year. The analysis conservatively assumed that the refueling water purification path will fail and drain the RWST under a range of seismic events. Also, operator actions are conservatively not credited after a break in the purification flowpath. Even with these conservative assumptions, having the RWST in recirculation mode while the plant is at power results in a very small increase in risk due to seismic events.

The condition described in this Licensee Event Report is reportable in accordance with the following: 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications. 10 CFR 50.73(a)(2)(v)(D), Event or Condition that could have prevented fulfillment of a safety function. For purposes of Safety System Functional Failures (SSFF) reporting, this constitutes three (3) SSFFs as there were three events in the 12 months prior to LER 2011-001-00, May 4, 2011. These events are historical and are not included in the current reporting of SSFF. The change file for SSFF data has been submitted for these.

**V. CORRECTIVE ACTIONS**Completed Corrective Actions:

- Administrative controls have been put in place to provide guidance for Operations on alignment restrictions for piping that could affect the operability of the RWST.

Planned Corrective Actions:

- Applicable Operations procedures will be revised to restrict alignment of the refueling water purification loop to periods when RWST operability is not required.
- Applicable sections of the UFSAR and Design Basis Documentation will be revised to include restrictions on the operating modes when the purification loop is allowed to be used to purify the RWST.

**VI. PREVIOUS SIMILAR EVENTS:**

Licensee Event Reports (LERs) for HBRSEP, Unit No. 2, were reviewed from the past 5 years. No similar events were identified.