



**Progress Energy**

Serial: RNP-RA/10-0127

**JAN 17 2011**

Attn: Document Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23

LICENSEE EVENT REPORT NO. 2010-007-01  
REACTOR TRIP DUE TO A DEGRADED CONNECTION ON A CIRCUIT BOARD IN THE  
ELECTRO-HYDRAULIC CONTROL CABINET

Ladies and Gentlemen:

The attached Licensee Event Report (LER) is provided to include a planned corrective action for LER 2010-007-00, which was submitted to the Nuclear Regulatory Commission on November 5, 2010. Should you have any questions regarding this matter, please contact Mr. C. A. Castell at (843) 857-1626.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas S. Cosgrove'.

Thomas S. Cosgrove  
Plant General Manager  
H. B. Robinson Steam Electric Plant, Unit No. 2

TSC/psf

Attachment

c: L. A. Reyes, NRC, Region II  
B. L. Mozafari, NRC, NRR  
NRC Resident Inspector

IE22  
NMR

**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**

Reactor Trip Due to a Degraded Connection on a Circuit Board in the Electro-Hydraulic Control Cabinet

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
09	09	2010	2010	007	01	1	17	2011		05000
9. OPERATING MODE  1			11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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)				
10. POWER LEVEL  100%			<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 checked="" 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 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

Pamela Fergen

## TELEPHONE NUMBER (Include Area Code)

843-857-5314

**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
X	JJ	CBD	Siemens	Y					

**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)

At 1437 hours EDT on September 9, 2010, with H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in Mode 1 at approximately 100% power, an automatic reactor trip occurred. The reactor trip signal was based on the Overtemperature  $\Delta T$  (OT $\Delta T$ ) reactor protection function. Due to the plant transient condition, the three steam generator Power Operated Relief Valves (PORVs) opened and one pressurizer PORV cycled momentarily.

This event is being investigated using the HBRSEP, Unit No. 2, Corrective Action Program (CAP) and is being documented in Nuclear Condition Report (NCR) 420936. During investigation of the cause of the transient, a degraded connection on a circuit board (1A08H2) in the electro-hydraulic (EH) control cabinet was found. It has been concluded that this condition caused the loss of the governor valve common signal to the four turbine governor valves. Closure of the governor valves caused pressure and temperature in the Reactor Coolant System (RCS) to change. This resulted in the opening of a pressurizer PORV and the OT $\Delta T$  reactor protection function initiating a reactor trip. The completed corrective action was replacement of the circuit board (1A08H2) found with the degraded connection.

The condition described in this Licensee Event Report is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A), any event or condition that resulted in manual or automatic actuation of any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B).

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
		2010	- 007	- 01	

## NARRATIVE

## I. DESCRIPTION OF EVENT

At 1437 hours EDT on September 9, 2010, with H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in Mode 1 at approximately 100% power, an automatic reactor trip occurred. The reactor trip signal was based on the Overtemperature  $\Delta T$  (OT $\Delta T$ ) reactor protection function. Due to the plant transient condition, the steam generator Power Operated Relief Valves (PORVs) [AB:PCV] opened and one pressurizer PORV cycled momentarily in response to pressure changes in the steam generators [AB:SG] and pressurizer [AB:PZR]. The Auxiliary Feedwater System [BA] automatically actuated, as expected, and provided feedwater to the steam generators. The main steam safety valves [SB:PCV] did not open during the event.

## II. CAUSE OF EVENT

This event is being investigated using the HBRSEP, Unit No. 2, Corrective Action Program (CAP) and is being documented in Nuclear Condition Report (NCR) 420936. During investigation of the cause of the transient, a degraded connection on a circuit board (1A08H2) in the electro-hydraulic (EH) control cabinet was found. It has been concluded that this condition caused the loss of the governor valve common signal to the four turbine governor valves. Closure of the governor valves caused pressure and temperature in the Reactor Coolant System (RCS) to change. This resulted in the opening of a pressurizer PORV and the OT $\Delta T$  reactor protection function initiating a reactor trip.

## III. ANALYSIS OF EVENT

The condition described in this Licensee Event Report is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A), any event or condition that resulted in manual or automatic actuation of any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B).

## IV. CORRECTIVE ACTIONS

Completed Corrective Actions:

- The defective circuit board (1A08H2) was replaced.

Planned Corrective Actions:

- Revise existing preventative maintenance model to require testing to validate proper circuit card seating of any EH System circuit cards that are replaced. This PM revision should include checking circuit boards for bent pins prior to installation as well as verifying all installed and surrounding circuit boards are seated properly.

## 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
		2010	- 007	- 01	

**NARRATIVE**

### V. ADDITIONAL INFORMATION

Previous Similar Events:

Licensee Event Report 2006-001-00

At 0247 hours on October 25, 2006, with H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in Mode 1 at 100% power, control room operators responded to alarms received for steam flow greater than feed flow on all three steam generators. The control room operators diagnosed the event as a 100% load rejection and initiated a manual reactor trip at 0248 hours, 68.8 seconds following the start of the event. The root cause of this event was failure of a turbine governor valve electro-hydraulic control system card.

While equipment failures were identified as the cause of this event, no similar component failures were identified.