

10CFR50.73

February 10, 2011

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Limerick Generating Station, Unit 1
Facility Operating License No. NPF-39
NRC Docket No. 50-352

Subject: LER 2010-002-00, High Pressure Coolant Injection
System Overspeed Trip Mechanism Test Failure

This Licensee Event Report (LER) addresses an event that could have prevented the fulfillment of the High Pressure Coolant Injection System safety function due to a failure of the overspeed trip mechanism to reset during a periodic test.

This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v)(D).

There are no commitments contained in this letter.

If you have any questions, please contact John Hunter III at (610) 718-3400.

Respectfully,

Original signed by

William F. Maguire
Vice President - Limerick
Exelon Generation Company, LLC

cc: Administrator Region I, USNRC
E. M. DiPaolo, USNRC Senior Resident Inspector, LGS

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 Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to 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 Limerick Generating Station, Unit 1	2. DOCKET NUMBER 05000352	3. PAGE 1 OF 4
--	-------------------------------------	--------------------------

4. TITLE
High Pressure Coolant Injection System Overspeed Trip Mechanism Failure To Reset

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
12	12	2010	2010	- 002	- 00	02	10	2011		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: <i>(Check all that apply)</i>									
	<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)						
10. POWER LEVEL 100	<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 type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A						

12. LICENSEE CONTACT FOR THIS LER

NAME John G. Hunter III, Manager – Regulatory Assurance	TELEPHONE NUMBER <i>(Include Area Code)</i> 610-718-3400
--	---

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	BJ	12	T147	Y					

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

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

The High Pressure Coolant Injection system was rendered inoperable due to a failure of the overspeed mechanism to reset during a periodic test. The cause of the failure to reset was most likely a temporary blockage of the overspeed trip mechanism piston drain port. The condition was corrected by flushing the overspeed trip mechanism during troubleshooting activities.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Limerick Generating Station, Unit 1	05000352	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4
		2010	- 002	- 00	

NARRATIVE

Unit Conditions Prior to the Event

Unit 1 was in Operational Condition (OPCON) 1 (Power Operation) at approximately 100% power. There were no structures, systems or components out of service that contributed to this event.

Description of the Event

On December 12, 2010, Limerick Unit 1 was operating at 100% power and the High Pressure Coolant Injection (HPCI) Turbine Overspeed Mechanism Operability Check (RT-6-055-330-1) was in progress. At 1042 hours, the HPCI (EIIS:BJ) overspeed trip mechanism (EIIS:12) would not return to the reset position when manually tripped. Subsequent efforts to adjust the reset time did not correct the problem. With the auxiliary oil pump operating the overspeed trip mechanism continued to cycle between an intermediate position and the tripped position and the HPCI turbine stop valve remained closed. Prior to securing the auxiliary oil pump and exiting the test procedure a final attempt to manually reset the overspeed trip mechanism was successful. Subsequent restart of the auxiliary oil pump to perform troubleshooting (TRT 10-154) to verify and adjust overspeed trip mechanism hydraulic pressures resulted in satisfactory operation of the HPCI turbine hydraulic system and the overspeed trip mechanism. The failure of the overspeed trip mechanism to reset when manually tripped could not be duplicated during subsequent performances of RT-6-055-330-1.

The licensed operators declared the HPCI system inoperable and unavailable. The operators entered Technical Specification (TS) 3.5.1, ECCS, which requires restoration of the HPCI system within 14 days. HPCI was restored to available status at 2156 hours during troubleshooting (TRT-10-154). HPCI was returned to operable status on Monday December 13, 2010 at 1754 hours.

This event resulted in a condition that at the time of discovery could have prevented the fulfillment of the safety function of the HPCI system which is reportable per the requirements of 10CFR50.72(b)(3)(v)(D) and 10CFR50.73(a)(2)(v)(D). An 8-hour NRC ENS notification (#46474) was completed on Sunday, December 12, 2010 at 1645 hours. This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v)(D).

Analysis of the Event

There were no actual safety consequences associated with this event. The HPCI System was rendered inoperable due to failure of the overspeed trip mechanism to reset when manually tripped for a periodic test; however, all other Emergency Core Cooling Systems and the Reactor Core Isolation Cooling (RCIC) System remained operable during the event.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Limerick Generating Station, Unit 1	05000352	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 4
		2010	- 002	- 00	

NARRATIVE

Troubleshooting activities did not identify any HPCI component failure that caused this problem. Failure of the overspeed trip mechanism to reset when manually tripped could not be duplicated during subsequent performances of the test. Given the intermittent nature of the problem, the most likely cause of the failure of the overspeed trip mechanism to reset during the initial performance of RT-6-055-330-1 is believed to be either sludge or foreign material temporarily plugging the overspeed trip mechanism piston drain port (Port "F") which prevented the oil pressure at Port "C" from decreasing and the trip mechanism reset spring from returning the piston to the reset position. The cause of the foreign material entering the overspeed trip mechanism piston drain port is unknown. Unit 1 HPCI turbine lube oil samples and oil filter performance did not indicate an oil cleanliness issue prior to the event.

Cause of the Event

The most likely cause of the failure of the overspeed trip mechanism to reset during the initial performance of the test was either sludge or foreign material temporarily plugging the overspeed trip mechanism piston drain port.

Corrective Action Completed

Troubleshooting efforts were completed which eliminated equipment failure and improper hydraulic circuit pressure settings as the potential cause of the problem and flushed the overspeed trip mechanism.

The periodic test that demonstrates operability of the Unit 1 HPCI overspeed trip mechanism was placed on increased frequency. The test was completed successfully on a weekly frequency for four weeks and is presently on a monthly frequency.

Corrective Action Planned

The maintenance procedure that governs HPCI turbine inspections (M-C-756-001) will be enhanced to provide more specific requirements regarding inspection and cleaning of the overspeed trip mechanism.

The Unit 1 and Unit 2 HPCI overspeed trip mechanisms will be disassembled and inspected.

Previous Similar Occurrences

There have been no malfunctions of the HPCI overspeed trip mechanism due to foreign material in the previous five year period.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Limerick Generating Station, Unit 1	05000352	YEAR	SEQUENTIAL NUMBER	REV NO.	4 OF 4
		2010	- 002	- 00	

NARRATIVE

Component data:

System: BJ (High Pressure Coolant Injection System)
 Component: TRB (Turbine)
 Component Number: 10-S211
 Manufacturer: T147 Terry Steam Turbine Co
 Model Number: A-3-DBC-187