



Exelon Generation

April 22, 2015

10 CFR 50.73

SVP-15-022

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

**Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265**

Subject: Licensee Event Report 265/2015-001-00, "Unit 1 HPCI Watertight Door Found Open Results in Unit 2 HPCI Inoperability."

Enclosed is Licensee Event Report (LER) 265/2015-001-00, "Unit 1 HPCI Watertight Door Found Open Results in Unit 2 HPCI Inoperability," for Quad Cities Nuclear Power Station, Unit 2.

This report is submitted in accordance with 10 CFR 50.73 (a)(2)(v)(D) which requires the reporting of any event or condition that could have prevented fulfillment of a safety function.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this report, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,

**Scott Darin
Site Vice President
Quad Cities Nuclear Power Station**

**cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station**

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NRR*



LICENSEE EVENT REPORT (LER)

(See Page 2 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 and Information Collections Branch (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 Quad Cities Nuclear Power Station Unit 2	2. DOCKET NUMBER 05000265	3. PAGE 1 OF 4
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4. TITLE
Unit 1 HPCI Watertight Door Found Open Results in Unit 2 HPCI Inoperability

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
03	05	2015	2015	001	00	03	30	2015	Quad Cities Nuclear Power Station Unit 1	05000254
									N/A	N/A

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)
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

LICENSEE CONTACT Brian Cushman, Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) (309) 227-2810
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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

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <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)

On March 5, 2015, at approximately 1640, the watertight door for the Unit 1 High Pressure Coolant Injection (HPCI) room was found open with no person in attendance. In this condition, the door is not able to perform the flood protection function. With no person in attendance the door would not be shut to prevent internal flood water from entering the Unit 1 HPCI room. This condition would result in the inoperability of equipment in the room it is designed to protect from flooding.

The construction of the adjacent Unit 1 and Unit 2 HPCI rooms provides no flood barrier between the two rooms. Therefore, a condition that results in flood protection being nonfunctional to one HPCI room also has an effect on the opposite Unit HPCI. The Unit 1 HPCI watertight door being found open, with no one in attendance, results in the unplanned inoperability of the Unit 2 HPCI, since the Unit 2 HPCI is required to be operable by Technical Specifications in Mode 1. The Unit 1 HPCI was not required to be operable since Unit 1 was in Mode 5. Therefore, this Licensee Event Report is being submitted in accordance with 10 CFR 50.73 (a)(2)(v)(D) for an event or condition that could have prevented fulfillment of a safety function.



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

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 and Information Collections Branch (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.

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Quad Cities Nuclear Power Station Unit 2	05000265	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4	
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NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric – Boiling Water Reactor, 2957 Megawatts Thermal Rated Core Power

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION

Unit 1 HPCI Watertight Door Found Open Results in Unit 2 HPCI Inoperability

A. CONDITION PRIOR TO EVENT

Unit: 1 / 2 Event Date: March 5, 2015 Event Time: 1900
 Reactor Mode: 5 / 1 Mode Name: Refueling / Power Operation Power Level: 000% / 100%

B. DESCRIPTION OF EVENT

On March 5, 2015, an individual identified that the Unit 1 High Pressure Coolant Injection (HPCI) watertight door [DR] was open with no one in attendance. This information was provided to the shift manager at 1900. The shift manager indicated that this information had not been reported previously to the shift and dispatched an equipment operator to verify the status of the watertight door. At 1915, the shift manager received the report from the equipment operator that the Unit 1 HPCI watertight door was found shut and dogged.

As stated in the Updated Final Safety Analysis Report (UFSAR), section 3.4.1.2.2, the watertight door is a flood barrier to prevent water from entering the Unit 1 HPCI room from the reactor building basement. Flood protection is required to support operability of systems in the Technical Specifications. Due to the construction of the adjacent Unit 1 and Unit 2 HPCI rooms, there is no flood barrier between the two rooms. Therefore, a condition that results in flood protection being nonfunctional to one HPCI room also has an effect on the opposite Unit HPCI. The Unit 1 HPCI watertight door being found open, with no one in attendance, results in the unplanned inoperability of the Unit 2 HPCI, since the Unit 2 HPCI is required to be operable by Technical Specifications in Mode 1. The Unit 1 HPCI is not required to be operable with Unit 1 in Mode 5.

Because the Unit 2 HPCI was inoperable while Unit 2 was in the mode of applicability, this is a required report to the NRC by 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of a safety function of structures or systems that are needed to: (D) Mitigate the consequences of an accident."

C. CAUSE OF EVENT

This condition was a result of a human performance deficiency for a worker to properly control the watertight door per station procedure. QCAP 0250-06, step D.1.a states, "It is the responsibility of the individual using the door to verify it is properly closed and "dogged" (latched)."

It is unknown which persons or what workgroup would have been responsible for the control of this watertight door at this time. For a human performance deficiency, without understanding why it occurred from the involved party, we cannot establish an apparent cause or the circumstances. Because of this fact, briefings to the workforce were conducted by department heads and senior management. In addition, interim actions established periodic tours conducted by management to check the watertight doors, along with targeted observations by the outage standards team and nuclear oversight.

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NARRATIVE

D. SAFETY ANALYSIS

System Design

The HPCI system is designed to inject water into the Reactor Vessel under loss-of-coolant conditions which do not result in a rapid depressurization of the Reactor Vessel, such as a small break Loss of Coolant Accident (LOCA).

The internal flood protection measures described in the UFSAR establish that a single failure in a non-Class I system will not preclude safe shutdown of the affected Unit. In order to preclude safe shutdown of the affected Unit, such flooding would have to disable the core cooling pumps located in five completely separate areas of the Unit (i.e., Residual Heat Removal (RHR) corner rooms A and B; Core Spray corner rooms A and B; and the HPCI pump room.) However, each of these rooms is protected from adjacent areas by watertight doors and walls. Therefore, no single failure will cause flooding to more than one of these areas and no single failure of non-Class I systems will prevent safe shutdown of the affected Unit.

To support flood protection, watertight doors were constructed for each of the Emergency Core Cooling System (ECCS) pump compartments. These doors will prevent water in the torus room area from leaking into the pump compartment and will assure the availability of the ECCS in the event of a passive failure of the torus.

Safety Impact

The above statements from the UFSAR establish that the flood protection in the reactor building basement is based on a passive failure in the torus area, and that this passive failure is a safe shutdown event, not an accident described in Chapter 15 of the UFSAR. As such, this event would not be combined with a failure of the Reactor Coolant System (RCS) and would not require HPCI as part of any success path. HPCI is needed for those events where RCS inventory is lost while RCS pressure remains above the shutoff pressure for the low pressure injection systems. For these reasons, the open watertight door does not impact the safety function of HPCI.

This condition does not constitute a Safety System Functional Failure (SSFF) as the condition did not affect the function of HPCI to respond to a design basis event. As noted above, with the Unit 1 HPCI watertight door open, the ability of the HPCI to complete its specified safety function was not compromised.

An engineering analysis was performed that demonstrated this event did not constitute a SSFF. (Reference NEI 99-02, Revision 7, Regulatory Assessment Performance Indicator Guideline, Section 2.2, Mitigating Systems Cornerstone, Safety System Functional Failures, Clarifying Notes, Engineering analyses.) As such, this event will not be reported in the NRC Performance Indicator (PI) for safety system functional failures since an engineering analysis was performed which determined that the system was capable of performing its safety function with the identified degraded condition.

Risk Insights

Using the plant PRA, risk is unaffected since the Unit 2 HPCI was maintained available. As a result, there is no change in Core Damage Frequency (CDF) due to the Unit 1 HPCI watertight door being found open.

**LICENSEE EVENT REPORT (LER)
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NARRATIVE

E. CORRECTIVE ACTIONS

Immediate:

- Verified the watertight door was shut and dogged.
- Established tour requirements to check watertight door status.

Follow-up:

- Briefings to the workforce conducted by department heads and senior management for individuals on site.

F. PREVIOUS OCCURRENCES

The station events database, LERs, and INPO Consolidated Event System (ICES) were reviewed for similar events at Quad Cities Nuclear Power Station. This event was caused by a human performance failure to close a watertight door.

No previous occurrences were identified in this search applicable to the circumstances of this event.

G. COMPONENT FAILURE DATA

Failed Equipment: N/A
 Component Manufacturer: N/A
 Component Model Number: N/A
 Component Part Number: N/A

This event has not been reported to ICES since there was no equipment failure.