

July 18, 2007

U.S. NRC Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Limerick Generating Station, Unit 2
Facility Operating License No. NPF-85
NRC Docket No. 50-353

Subject: Special Report – Unit 2 HPCI/RCIC Injection Into The Reactor Coolant System

Reference: LER 2-07-003 Unit 2 Scram on Low Reactor Level

This Special Report is being submitted pursuant to the requirements of Limerick Generating Station (LGS) Unit 2 Technical Specifications 3.5.1.f, 3.7.3.b, and 6.9.2 concerning Emergency Core Cooling System (ECCS) injection into the Reactor Coolant System (RCS). High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) injected into the RCS following a low reactor level event on April 24, 2007.

On April 24, 2007, with Unit 2 operating at 100% power (OPCON 1), the unit scrammed automatically at 02:10 hours due to low reactor level, which occurred from a feedwater runback event. Reactor level dropped below +12.5", which is the low level Scram set point, and continued to drop below -38", which is the HPCI and RCIC auto initiation set point. Reactor level reached a low of -88". HPCI and RCIC automatically started and injected water into the reactor vessel and reactor level was restored.

During injection into the reactor vessel, both HPCI and RCIC systems experienced flow oscillations. Both systems were placed in "manual" control and appropriate reactor water level was maintained. The Reactor Operators also noted that HPCI and RCIC suction had transferred from the condensate storage tank (CST) to the suppression pool during the event. At approximately 02:17 hours both HPCI and RCIC flow was secured and level was maintained with feedwater.

Reactor Parameters prior to the transient were as follows:

Reactor Power	3456	MWt
Reactor Coolant System Pressure	1037	PSIG
Reactor Coolant System Temperature	514	deg F
Core Flow	96.1	Mlbm/hr
Feedwater Flow	15.0	Mlbm/hr
Feedwater Temperature	431	deg F
Condensate Storage Tank Water Temperature	131	deg F
Suppression Pool Water Temperature	74	deg F

The HPCI system automatic actuation and injection was caused by a low reactor water level condition. HPCI flow was approximately 3000 GPM on average during the 2 minutes the system experienced flow oscillations. Once the system was placed in manual, flow was

adjusted to 5600 GPM for a short period and then was slowly reduced as reactor water level increased until the turbine was manually secured. The total length of time HPCI injected during this event was approximately 3 minutes. This constitutes the seventh Unit 2 HPCI actuation and injection. The current usage factor for the safety injection nozzles for HPCI injection is less than 0.70.

During this transient, RCIC also automatically actuated and injected as a result of the low reactor water level condition. RCIC flow was approximately 300 GPM on average during the 2 minutes the system also experienced flow oscillations. Once the system was placed in manual, flow was adjusted to 600 GPM, and the system maintained this flow rate through the remainder of the run until the turbine tripped on high reactor water level. The total length of time RCIC injected during this event was approximately 6 minutes. This constitutes the eleventh Unit 2 RCIC actuation and injection.

The event was evaluated (IR 620857) for the potential fatigue impact on the reactor pressure vessel (RPV) nozzles. The HPCI injection was through feedwater loop A (nozzles N4A, B, C) and core spray loop B (nozzle N5A). The RCIC injection was through feedwater loop B (nozzles N4D, E, F). The analysis of the event when compared to the design thermal cycles (B11-A001-V083) concluded that there is no increase in the usage factor and the fatigue usage factor for the feedwater and core spray nozzles, and remains bounded by the original design value as described in FSAR Section 3.9.3.

There are no commitments contained in this letter.

If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

Original signed by

Christopher H. Mudrick
Vice President – Limerick
Exelon Generation Company, LLC

cc: S. J. Collins, Administrator Region I, USNRC
S. L. Hansell, USNRC Senior Resident Inspector, LGS