

# Limerick 2

## 2Q/2007 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:**  Apr 24, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate HPCI/RCIC Flow Controller Tuning Procedure**

The inspectors identified a Green, self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion V, "Instructions Procedures and Drawings," due to an inadequate maintenance procedure for flow controller settings for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) systems which resulted in severe system flow oscillations during vessel injection following a reactor scram.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The performance deficiency associated with this event is an inadequate maintenance procedure that resulted in HPCI and RCIC flow oscillations during reactor vessel injection. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRCs regulatory function, and was not the result of any willful violation of NRC requirements or Exelon procedures. The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation.

This issue has a cross-cutting aspect in the Human Performance area for resources. Specifically, the HPCI/RCIC flow controller tuning procedure did not specify the acceptable values to prevent flow oscillations.

Inspection Report# : [2007003](#) (*pdf*)

**Significance:**  Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation**

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions," because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short

exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.

Inspection Report# : [2006005](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Mar 10, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Clearance Results in Opening of the Scram Discharge Vent Drain Valves**

The inspectors identified a green, self-revealing, non-cited violation of Technical Specification 6.8, "Procedures and Programs," due to an inadequate safety tagging clearance which resulted in inadvertently opening the scram discharge volume vent and drain valves in hot shutdown with a full scram signal inserted, valves that were part of the reactor coolant system pressure boundary. Station personnel discovered the condition and closed the SDV vent and drain valves, stopping the source of water. Exelon entered this issue into their corrective action program for resolution.

The finding is more than minor because it affects the reactor coolant system (RCS) equipment and barrier performance attribute of the Barrier Integrity cornerstone whose objective is to provide reasonable assurance that physical design barriers protect the public from radionuclide releases. This finding is of very low safety significance because it did not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and would not have likely affected other mitigation systems resulting in a total loss of their safety function. The reactor was already shutdown and depressurized to 25 psig, with decay heat removal to the condenser, prior to the event and thus did not increase the chance of a loss of coolant accident (LOCA). This issue has a human performance cross-cutting aspect in the area of work control because station personnel did not appropriately coordinate the safety tagging work activity.

Inspection Report# : [2007002](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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# Miscellaneous

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