UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

December 8, 2011

EA-11-221

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Rd.
Warrenville, IL 60555

SUBJECT: FINAL SIGNIFICANCE DETERMINATION FOR A WHITE FINDING WITH ASSESSMENT FOLLOW-UP AND NOTICE OF VIOLATION [NRC INSPECTION REPORT NO. 05000353/2011009] – LIMERICK GENERATING STATION, UNIT 2

Dear Mr. Pacilio:

This letter provides you the final significance determination for the preliminary White finding discussed in the U.S. Nuclear Regulatory Commission (NRC) letter dated November 4, 2011, as well as the NRC assessment of the current performance of the Exelon Generation Company, LLC (Exelon) Limerick Generating Station (Limerick) Unit 2. This updated assessment of Limerick Unit 2 supplements, but does not supersede, the NRC annual assessment letter issued on March 4, 2011 (ML110620350)[1].

As described in the November 4, 2011 letter, the self-revealing finding was recognized by Limerick staff on May 23, 2011, and reviewed during an NRC inspection completed on September 30, 2011. The finding involved the failure by Exelon to ensure sufficient technical guidance was contained in operating procedures to: (1) ensure that a feedwater (FW) motor operated valve (MOV) could close against expected system differential pressures; and (2) prevent operators from attempting to close FW MOVs out of sequence resulting in differential pressures for which they are not designed. As a result, two FW valves (one of which was a primary containment isolation valve (PCIV)) failed to fully shut when Exelon operators at Limerick attempted to close them in order to secure a FW system flush. Consequently, from April 23 to May 23, 2011, the PCIV was inoperable for greater than its Technical Specification allowed outage time. Additionally, because the Limerick Unit 2 reactor core isolation cooling (RCIC) system discharges to the reactor via the B FW header, with the affected FW valves cracked open, a flow path existed for RCIC to flow to the main condenser instead of the reactor. As a result, in this configuration, RCIC would not have been able to supply design flow to the reactor. Consequently, for this same time period, the Limerick Unit 2 RCIC system was also

[1] Designation in parentheses refers to an Agency-wide Documents Access and Management System (ADAMS) accession number. Documents referenced in this letter are publicly-available using the accession number in ADAMS.

inoperable for greater than its Technical Specification allowed outage time. The finding was presented at an exit meeting held at the conclusion of the inspection on October 7, 2011, and is described in detail in the subject inspection report (NRC Inspection Report 05000352/2011004 and 05000353/2011004; ML11308B146).

The November 4, 2011, letter also included an offer for Exelon to attend a regulatory conference or reply in writing to provide its position on the facts and assumptions the NRC used to arrive at the finding and its safety significance. In a letter dated November 14, 2011, William Maguire, Limerick Site Vice President, indicated that Exelon did not contest the characterization of the risk significance of this finding and that Exelon declined its opportunity to discuss this issue in a regulatory conference or to provide a written response. After considering the information developed during the inspection, the NRC has concluded that the inspection finding is of low to moderate safety significance, and is therefore appropriately characterized as White.

As a result of the NRC review of the performance at Limerick Unit 2, including this White finding in the Mitigating Systems Cornerstone, the NRC has assessed Limerick Unit 2 to be in the Regulatory Response column of the NRC Action Matrix, retroactive to the beginning of the third calendar quarter of 2011. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area," when Exelon staff notify us of their readiness for this inspection. This inspection is conducted to provide assurance that the root cause and contributing causes of risk significant performance issues are understood, the extent of condition is identified, and the corrective actions are sufficient to prevent recurrence.

The NRC has also determined that the finding involved violations of NRC regulations, as cited in the enclosed Notice of Violation (Notice), and described in detail in the subject inspection report. In accordance with the NRC Enforcement Policy, the Notice is considered an escalated enforcement action because it is associated with a White finding.

The NRC has concluded that information regarding: (1) the reason for the violations; (2) the actions planned or already taken to correct the violations and prevent recurrence; and, (3) the date when full compliance was achieved, is already adequately addressed on the docket in NRC Inspection Report 05000352/2011004 and 05000353/2011004 and this letter. As described in the subject inspection report, upon identification of the issue on May 23, 2011, Exelon staff fully closed the FW valves, which restored operability to the RCIC system and the PCIV. Additionally, Exelon has planned long-term corrective actions to address this issue, including revising the applicable procedure, performing maintenance and testing on the valves, and revising the scope for preventative maintenance of the valves. Therefore, Exelon is not required to respond to this letter unless the description therein does not accurately reflect Exelon's corrective actions or its position.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room located at NRC Headquarters in Rockville, MD, and from the NRC's Agency-wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, if you choose to provide one, should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

William M. Dean
Regional Administrator

Docket No. 50-353
License No. NPF-85

Enclosure:
Notice of Violation

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room located at NRC Headquarters in Rockville, MD, and from the NRC's Agency-wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, if you choose to provide one, should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

***/RA/***

William M. Dean
Regional Administrator

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Enclosure:
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ENCLOSURE
NOTICE OF VIOLATION

Exelon Generation Company, LLC
Limerick Generating Station Unit 2

Docket No. 50-353
License No. NPF-85
EA-2011-221

During an NRC inspection conducted at the Exelon Generation Company, LLC (Exelon) Limerick Generating Station (Limerick) between July 1, 2011, and September 30, 2011, for which an exit meeting was held on October 7, 2011, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

A. Limerick Unit 2 Technical Specification (TS) 6.8, "Procedures and Programs," requires, in part, that written procedures shall be established, implemented, and maintained covering the activities recommended in Appendix A of Regulatory Guide (RG) 1.33, February 1978.

RG 1.33, "Quality Assurance Program Requirements (Operation), Rev. 2, Feb. 1978, Appendix A, Section 4.0, "Procedures for Startup, Operation, and Shutdown of Safety-Related BWR Systems," requires, in part, that instructions should be prepared for energizing, filling, venting, draining, startup, shutdown, and changing modes of operation of the feedwater system.

Limerick procedures GP-2, "Normal Plant Startup," Rev. 141 and S06.5.A, "Long Path Recirculation and Feedwater System Flushing," Rev. 35, contain direction and requirements for securing the feedwater long-path flush.

Contrary to the above, as of April 23, 2011, Exelon failed to establish adequate procedures for securing Limerick feedwater (FW) long-path flushing. Specifically, procedures GP-2, Rev. 141 and SO6.5.A, Rev. 35 did not: (1) prohibit Exelon operators at Limerick from securing the Unit 2 flush by closing the HV-041-209A/B valves (which are upstream of the common header valve, HV-041-210) when HV-041-210 failed to fully close; or, (2) otherwise instruct the operators that HV-041-209A/B are not designed to be closed at differential pressure. As a result, HV-041-209B (a primary containment isolation valve (PCIV)) did not fully seat, which resulted in a PCIV being inoperable for greater than its TS allowed outage time. Additionally, with both the HV-041-210 valve and the upstream HV-041-209B valve partially open, the Limerick Unit 2 reactor core isolation cooling system (RCIC) (which discharges to the reactor through the B FW header) would not have been able to supply design flow to the reactor and was, therefore, inoperable for greater than its TS allowed outage time.

B. Limerick Unit 2 TS Limiting Condition for Operation 3.6.3, "Primary Containment Isolation Valves," requires, in part, that each PCIV be operable in Modes 1, 2, and 3. With one or more PCIVs inoperable, the TS requires that at least one isolation valve must be maintained operable in each affected penetration that is open, and within 4 hours, either the inoperable valve(s) must be restored to operable status or the affected penetration must be isolated. If these conditions cannot be met, the reactor must be in at least hot shutdown within the next 12 hours and cold shutdown within the following 24 hours.

Limerick Unit 2 TS Limiting Condition for Operation 3.7.3, "Reactor Core Isolation Cooling System," requires, in part, that the RCIC system be operable in Modes 1, 2, and 3. With RCIC inoperable, operation may continue for 14 days, provided the high pressure coolant injection system is operable. If this condition cannot be met, the reactor must be in at least hot shutdown within the next 12 hours, and reactor steam dome pressure must be reduced to less than or equal to 150 psig within the following 24 hours.

Contrary to the above, between April 23, 2011, and May 23, 2011, Exelon's Limerick Unit 2 operated in Modes 1, 2, and 3, and during that time:

1) a PCIV (HV-041-209B) was inoperable (in that the PCIV, which is normally closed, locked, and de-energized, was partially open and was, therefore, unable to perform its safety function), and during this period, the affected penetration remained unisolated, and the reactor was not taken to hot shutdown within 12 hours and cold shutdown within 24 hours; and,

2) the RCIC system was also inoperable (because both the HV-041-210 valve and the upstream HV-041-209B valve were partially open and as a result, RCIC would not have been able to supply design flow to the reactor), and the plant was not taken to hot shutdown within the next 12 hours and reactor steam dome pressure was not reduced to less than or equal to 150 psig within the following 24 hours.

These two violations are associated with a White SDP finding.

The NRC has concluded that information regarding: (1) the reason for the violation; (2) the actions planned or already taken to correct the violation and prevent recurrence; and, (3) the date when full compliance was achieved, is already adequately addressed on the docket in NRC Inspection Report 05000352/2011004 and 05000353/2011004. Therefore, Exelon is not required to respond to this Notice of Violation (Notice). However, Exelon is required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect Exelon's corrective actions or its position. In that case, or if Exelon chooses to respond, clearly mark the response as a "Reply to a Notice of Violation; EA-2011-221," and send the response to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region I, 475 Allendale Rd., King of Prussia, PA 19406, and a copy to the NRC Resident Inspector at Limerick Generating Station, within 30 days of the date of the letter transmitting this Notice.

If Exelon contests this enforcement action, Exelon should also provide a copy of its response, with the basis for its denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001. If Exelon chooses to respond, its response will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's Agency-wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, Exelon may be required to post this Notice within two working days of receipt.

Dated this 8th day of December, 2011.