



Exelon Generation®

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10CFR2.201

November 30, 2012

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: Reply to a Notice of Violation

Reference: NRC Letter to Exelon Generation Company, LLC, "Limerick Generating Station - NRC Integrated Inspection Report 05000352/2012004 and 05000353/2012004 and Notice of Violation," dated November 1, 2012

In response to the referenced letter involving Limerick Generating Station, attached please find our response to the item required. Limerick has entered this issue into the Corrective Action Program (Issue Reports 1387851 and 1429761).

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,

Thomas J. Dougherty
Vice President-Limerick Generating Station
Exelon Generation Company, LLC

Attachment: Reply to Notice of Violation

cc: W. Dean, Administrator, Region I, USNRC
D. Jackson, NRC Region I Operations Branch Chief
E. DiPaolo, NRC Sr. Resident Inspector-LGS

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bcc: T. Dougherty - GML 5-1
D. Lewis – GML 5-1
R. Kreider – GML 5-1
M. Gillin-GML 4-1
R Dickinson – SSB 2-4
A. Columbus– SSB 4-2
M. Jesse – KSA
J. Murphy-GML 4-1
B. Shultz-GML 4-1
P. Marvel-GML 4-1
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R. Ruffe-LLC 3-1

ATTACHMENT
Reply to a Notice of Violation

Violation

"Limerick Generating Station Unit 1 Technical Specification 6.8, "Procedures and Programs," states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Regulatory Guide 1.33, Appendix A, Revision 2, February 1978, Section 5, "Procedures for Abnormal, Off-normal or Alarm Response," states, in part, "Each safety-related annunciator should have its own written procedure, which should normally contain the immediate operation actions."

Alarm response procedure, ARC-MCR-107-A2, Revision 3, contained written instructions to be implemented when Main Control Room Annunciator Panel 107, Window A2 alarm 'Turbine Control Valve / Stop Valve Scram Bypassed' was received. The procedure required, in part, that power be immediately reduced upon receipt of the alarm.

Contrary to the above, on July 11, 2012, Limerick operators did not adequately implement an alarm response procedure when responding to a main control room alarm. Specifically, the operators failed to immediately reduce power per alarm response procedure, ARC-MCR-107-A2, 'Turbine Control Valve / Stop Valve Scram Bypassed,' after the main control room received the alarm condition. Instead, the operators delayed the immediate reduction in reactor power to validate the control room alarm indication, and did not commence power reduction until one hour and forty-nine minutes later."

I. The reason for the violation:

The causal factors for the event are as follows:

- The operating crew failed to follow the alarm response card (ARC) and reduce power immediately because they improperly concluded that the ARC was not applicable to the plant conditions that existed at the time. The Alarm has multiple inputs, and they incorrectly interpreted the note in the ARC as indication that Reactor Protection System (RPS) was not bypassed. The crew failed to perform a timely operability assessment based on "reasonable assurance" criteria (NRC Inspection Manual guidance) and inappropriately prioritized crew actions to validate the alarm condition and investigate the actual impact on the Reactor Protection System (RPS) before reducing power. The decision to deviate from the ARC guidance, combined with a failure to recognize that a reasonable expectation for operability no longer existed for the RPS instruments led to the delay in taking actions per the Technical Specifications.

- The ARC did not provide adequate guidance to the operating crew for timely assessment of the condition and its impact to Reactor Protection System (RPS) operability per Limerick Generating Station (LGS), Unit 1 Technical Specification section 3.3.1 "Reactor Protection System Instrumentation."

II. The corrective steps that have been taken and the results achieved:

1. **Action:**

All operating crews were briefed on the event, including the procedural compliance errors and expectations regarding conservative response to alarm conditions.

Results:

The operating crews understand the significance of this event, their responsibility to adhere to station operating procedures and the need to respond in a conservative manner to unexpected plant conditions. The operators are aware of proper alarm response expectations as outlined in OP-AA-103-102, "Watch-Standing Practices".

2. **Action:**

Operations Standing Order 12-08 was issued in accordance with OP-AA-102-104, "Pertinent Information Program" to reaffirm the LGS Operations Department expectations for ARC usage. This Standing Order also included a requirement to treat all ARCs as Level 1 procedures.

Results:

All operators understand the expectation for ARC usage, including the requirement to treat all ARCs as Level 1 procedures. Alarm response cards must be followed as written or revised in accordance with station administrative procedures.

3. **Action:**

Formal training was conducted as part of the Licensed Operator Requalification Program on Operations teamwork and decision-making. The classroom training was provided in accordance with lesson plan LLOR1205O, and consisted of case study reviews of four station events with similar decision-making lessons as the ones derived from the event described in the NOV. These case study reviews focused on specific operator actions and behaviors that would have prevented or mitigated those events. The purpose of the case studies was to emphasize the need to work effectively as a team in order to make conservative decisions when faced with unexpected conditions.

Results:

This training has increased the Licensed Operators' sensitivity to the importance of conservative decision-making, and the behaviors expected.

4. Action:

The Station Vice President (VP) and the Plant Manager (PM) met with all LGS Shift Managers to reinforce senior leadership expectations for Senior Reactor Operators (SROs), with specific emphasis on the need to act in a conservative manner and adhere to station procedures. Timeliness of Operability assessments was also discussed.

Results:

The license requirements for SROs were reviewed. The VP and the PM outlined their expectations for the Shift Managers to act in a conservative manner when faced with unexpected plant conditions that could impact the safety of the facility. The requirements contained in the SRO license related to compliance with station procedures were specifically discussed. All Shift Managers acknowledged their responsibility to respond in a conservative manner and to adhere to station operating procedures as outlined in their SRO licenses.

5. Action:

The LGS Operations Director issued a memorandum to the LGS SROs to reaffirm their obligation to follow station procedures as a condition of the license granted to them by the Nuclear Regulatory Commission (NRC).

Results:

The memorandum provided a summary of the event and clearly outlined that failing to follow approved ARC guidance contributed to a Technical Specification violation. Each active SRO was required to sign the memorandum prior to standing watch in the Control Room, affirming their obligation to follow station procedures as a condition of the license granted to them by the NRC.

6. Action:

ARC-MCR-107 A2 and ARC-MCR-207 A2 for the Turbine Control Valve/Stop Valve Scram Bypassed alarm were revised to provide Operators with guidance to assess which RPS channels are impacted and to direct actions necessary to comply with Technical Specifications based on the affected combination of instruments.

Results:

The revised ARCs (ARC-MCR-107 A2, Revision 4 [Unit 1] and ARC-MCR-207 A2, Revision 6 [Unit 2]) provide more detailed and unambiguous information regarding the various combinations of inputs to this single alarm so operators can expeditiously understand and respond appropriately to actual plant conditions.

7. Action:

Procedure OP-LG-103-102 "Limerick Annunciator Response Card Use and Adherence" Revision 0, was issued.

Results:

This procedure governs ARC use, including the requirement to treat all ARCs as Level 1 procedures. This procedure institutionalizes the guidance previously issued under Standing Order 12-08 (see Action 2 in this NOV response). Alarm response cards must be followed verbatim or revised in accordance with station administrative procedures.

III. Corrective steps that will be taken:

1. Action:
Conduct simulator training focused on teamwork and decision-making skills for all Licensed Operators.

Due Date: December 21, 2012

IV. The date when full compliance was achieved:

Full compliance was achieved on October 22, 2012 when Standing Order 12-08 was issued to establish the LGS Operations Department expectations for ARC usage, including the requirement to treat all ARCs as Level 1 procedures.