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Exelon Nuclear

RS-10-049

March 11, 2010

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Response to Request for Additional Information Regarding Generic Letter 2008-01

References:

1. NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated January 11, 2008
2. Letter from K. R. Jury (Exelon Generation Company, LLC/AmerGen Energy Company, LLC) to U.S. NRC, "Three Month Response to Generic Letter 2008-01," dated April 11, 2008
3. Letter from K. R. Jury (Exelon Generation Company, LLC/AmerGen Energy Company, LLC) to U.S. NRC, "Nine-Month Response to Generic Letter 2008-01," dated October 14, 2008
4. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U.S. NRC, "Supplemental Response to Generic Letter 2008-01," dated July 7, 2009
5. Letter from P. Bamford (U.S. NRC) to C. Pardee (Exelon Nuclear), "Limerick Generating Station, Unit Nos. 1 and 2 – Request for Additional Information Regarding Generic Letter 2008-01, (TAC Nos. MD7841 and MD7842)," dated January 12, 2010

The NRC issued Generic Letter (GL) 2008-01 (i.e., Reference 1) to request that each licensee evaluate the licensing basis, design, testing, and corrective action programs for the Emergency Core Cooling, Decay Heat Removal, and Containment Spray systems, to ensure that gas

accumulation is maintained less than the amount that challenges operability of these systems, and that appropriate action is taken when conditions adverse to quality are identified.

References 2, 3, and 4 provided the Exelon Generation Company, LLC (EGC) response to NRC GL 2008-01 for Limerick Generating Station. In Reference 5, the NRC requested additional information that is required to complete the review. In response to this request, EGC is providing the attached information.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 11th day of March 2010.

Respectfully,

Patrick R. Simpson
Manager – Licensing

Attachment: Response to Request for Additional Information

cc: NRC Regional Administrator – Region I
Senior Resident Inspector – Limerick Generating Station

ATTACHMENT
Response to Request for Additional Information

NRC Request 1

The staff requests the following additional information regarding your surveillance procedure:

a) Summarize the surveillance locations along with the associated surveillance methods;

b) Discuss the surveillance intervals for the monitored locations, including justifications for surveillance intervals greater than a month;

c) Provide the surveillance criteria;

d) Discuss actions to be taken if surveillance criteria are not met;

e) State whether all voids identified will be quantified, recorded, and entered into the Corrective Action Program.

Response

As a result of the Generic Letter (GL) 2008-01 evaluations, Exelon Generation Company, LLC (EGC) made a regulatory commitment in Reference 1 to revise periodic venting procedures for the GL 2008-01 subject systems to include requirements to perform ultrasonic testing (UT) inspections on a graded approach as part of venting verifications of accessible high points. The committed date for this action was April 30, 2009. However, it was recently identified that all necessary actions associated with implementing this regulatory commitment have not been completed. As a result, the issue has been entered into EGC's Corrective Action Program.

The requirements to perform periodic UT inspections of accessible locations susceptible to gas accumulation are being established. The periodic UT inspections will be performed at high point location(s) of the Core Spray, Residual Heat Removal, and High Pressure Cooling Injection piping to trend gas accumulation and verify the amounts of gas accumulated will not affect system operability. The periodic UT inspections will be performed in addition to the UT inspections that are performed as part of system fill and vent activities during system restoration following maintenance.

The planned surveillance interval for the periodic UT inspections discussed above is 31 days. The inspections will be controlled via test procedures and performed prior to the monthly surveillance test that verifies the affected system discharge piping is filled with water by opening the high point vents in accordance with Technical Specifications. Based on trending of the actual, recorded UT results, the monitoring frequency may be adjusted. Unexpected or unexplained gas accumulation in a system is entered into the Corrective Action Program for evaluation of operability and whether an increased frequency of monitoring is required. Similarly, sustained gas accumulation free performance in a system is an indication that a relaxed frequency may be appropriate, after a certain confidence level has been established.

EGC has actively participated in the Nuclear Energy Institute (NEI) Gas Accumulation Team, and the respective pressurized water reactor and boiling water reactor owners groups activities focused on developing suitable guidance for licensees in the evaluation of voids in the piping

systems. These groups have engaged recognized industry experts and Nuclear Steam Supply System vendors to determine the most appropriate criteria applicable to current reactor designs. The assessment of voids on the suction side, through the pump, on the discharge, and the effects on downstream piping and the reactor has been considered. The criteria are documented in eight separate reports generated to support this effort, all of which have been made available to the NRC.

Reference 2 was submitted to the NRC to summarize and focus these separate industry efforts. The enclosure to this letter references these industry documents and provides insight on their application to evaluation of operability. The industry guidance is being used by EGC until such time that the NRC criteria can be formally issued and evaluated.

The test procedures that govern the periodic UT inspections require documentation of the inspection results, including quantification of void size. Failure to meet the surveillance acceptance criteria for a given inspection location would result in the initiation of an Issue Report (IR) in the Corrective Action Program. The IR would then be evaluated and dispositioned to determine the cause and identify appropriate corrective actions, such as an action to remove the void via venting. If the cause is understood and can be corrected to ensure no further gas intrusions occur, adjustment of the surveillance interval may not be required. However, the need to adjust the UT and venting frequencies is considered if the cause is not confirmed or it is determined to be necessary to confirm operability of the systems. Additionally, IRs and UT results are reviewed and trended by Engineering personnel.

NRC Request 2

Training was not identified in the GL but is considered by the NRC to be a necessary part of applying procedures and other activities when addressing the issues identified in the GL. Briefly discuss the training aspects of the issues described by this GL at LGS.

Response

GL 2008-01 did not require discussion of training to satisfy the 10 CFR 50.54(f) request; therefore, none was provided in the GL response for LGS. However, when any station procedure is created or modified, an assessment for training needs and change management is required in accordance with procedure AD-AA-101, "Processing of Procedures and T&RMs." The determination is typically a function of the nature of the change and the perceived impact on the organization. If the assessment concludes that training is required, the training is generally accomplished prior to, or in parallel with, issuance of the procedure. For fill and vent procedure revisions, the changes have generally been minor, and have been considered enhancements. Training of personnel performing UT inspections for the presence of air is performed in accordance with procedure ER-AA-335-001, "Qualification and Certification of Nondestructive Examination (NDE) Personnel."

EGC is an active participant in the NEI Gas Accumulation Team, which is currently directing the Institute of Nuclear Power Operations (INPO) in the development of generic training modules for gas accumulation and management. These training modules target the Engineering, Operations, and Maintenance disciplines. Based on this active participation, EGC plans to

evaluate these training modules following completion for applicability to EGC, and may conduct training based upon the modules tailored to meet EGC's needs.

References

1. Letter from K. R. Jury (Exelon Generation Company, LLC) to U.S. NRC, "Nine-Month Response to Generic Letter 2008-01," dated October 14, 2008

2. Letter from J. H. Riley (Nuclear Energy Institute) to W. H. Ruland (U.S. NRC), "Industry Guidance – Evaluation of Unexpected Voids or Gas Identified in Plant ECCS and Other Systems," dated June 18, 2009