

RS-09-161

November 30, 2009

U.S. Nuclear Regulatory Commission
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11555 Rockville Pike
Rockville, MD 20852

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

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 January 20, 2009
 5. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U.S. NRC, "Supplemental Response to Generic Letter 2008-01," dated July 7, 2009

6. Letter from M. J. David (U.S. NRC) to C. G. Pardee (Exelon Nuclear), "Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 – Request for Additional Information Related to Generic Letter 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems' (TAC Nos. MD7797, MD7798, MD7804, and MD7805)," dated September 29, 2009

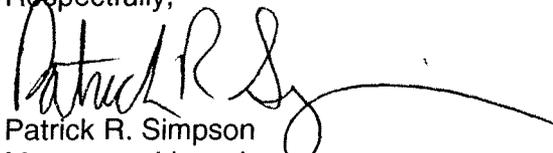
The NRC issued Generic Letter (GL) 2008-01 (i.e., Reference 1) to request that each licensee evaluate the licensing basis, design, testing, and corrective action programs for the Emergency Core Cooling, Decay Heat Removal, and Containment Spray systems, to ensure that gas accumulation is maintained less 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, 4, and 5 provided the Exelon Generation Company, LLC (EGC) responses to NRC GL 2008-01 for Braidwood Station and Byron Station. In Reference 6, 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 30th day of November 2009.

Respectfully,


Patrick R. Simpson
Manager – Licensing

Attachment: Response to Request for Additional Information

cc: NRC Regional Administrator – Region III
Senior Resident Inspector – Braidwood Station
Senior Resident Inspector – Byron Station

ATTACHMENT
Response to Request for Additional Information

NRC Request 1

Describe the revisions to be made to the emergency core cooling, decay heat removal, chemical and volume control, and containment spray systems' fill and vent procedures, particularly with respect to instrument lines.

Response

Fill and vent procedures for the Generic Letter (GL) 2008-01 subject systems have been revised to incorporate the following items:

- A prerequisite to work with Plant Engineering personnel to determine a strategy for system fill/vent to minimize gas accumulations in the system;
- A prerequisite to work with Plant Engineering personnel to identify locations where ultrasonic testing (UT) examinations are required to confirm proper filling and venting;
- Steps directing the performance of UT examinations to confirm piping is sufficiently full of water, including reference to the applicable monitoring procedure; and
- Steps to ensure that instruments that connect to drained portions of the GL 2008-01 subject systems are filled and vented prior to system restoration.

The sequence of activities, static fill/vent, dynamic fill/vent, and identification of affected instruments that require fill/vent are considered in development of system fill/vent strategies.

NRC Request 2

The aforementioned revisions were to be completed by December 31, 2008. What is the status of the revisions?

Response

The procedure revisions discussed in the response to NRC Request 1 have been implemented.

NRC Request 3

Describe the revisions to be made to the emergency core cooling, decay heat removal, chemical volume and control, and containment spray systems' periodic venting procedures, particularly with respect to acceptance criteria and ultrasonic testing.

Response

Historically, station procedures associated with the GL 2008-01 subject systems have not specified location-specific gas volume acceptance criteria. Rather, the procedures required vent valves to be opened, and a solid stream of water observed while venting. Since performance of UT examinations provides a consistent process to confirm the absence of voids, periodic venting procedures were revised to include requirements for performing UT

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examinations on a graded approach as part of venting verifications of accessible high points. The periodic venting procedures were revised to allow the use of UT examinations at specified locations and eliminate the need to vent if UT examinations confirm no voids are present. The acceptance criteria continue to require verification that the piping systems are full of water.

The periodic monitoring and trending procedures provide attachments for performing UT examinations at specified locations under the following circumstances:

- Refueling outage – prior to Mode 4;
- Refueling outage – prior to Mode 2 after shutdown cooling secured, Reactor Coolant System pressure > 1000 psig and accumulators un-isolated;
- Containment Spray system post fill and vent;
- Residual Heat system post fill and vent;
- Chemical and Volume Control system post fill and vent;
- Safety Injection system post fill and vent;
- Monthly monitoring (i.e., in conjunction with monthly venting procedure);
- Quarterly monitoring; and
- Semi-annual monitoring.

Locations specified in the procedure attachment include accessible high points most likely to accumulate gas and include locations with and without vent valves. Locations with vents are examined prior to venting, and if gas accumulation is detected, following venting to confirm gas was removed from the system. This allows for quantification of the gas accumulation for evaluation, trending, and if necessary, changes to the monitoring frequency.

NRC Request 4

The aforementioned revisions were to be completed by April 30, 2009. What is the status of the revisions?

Response

The procedure revisions discussed in the response to NRC Request 3 have been implemented.

NRC Request 5

If periodic venting of the emergency core cooling, decay heat removal, and chemical and volume control systems is performed without reference to specific gas volume acceptance criteria that must be met to satisfy the surveillances, then how is it determined that the surveillance intervals are adequate (i.e., intervals are short enough to detect the formation of voids before they become large enough to pose a threat to safety-related equipment)?

Response

The procedures that govern periodic venting of the GL 2008-01 subject systems are performed with reference to specific gas volume acceptance criteria that must be met to satisfy the

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surveillances. Specifically, the acceptance criterion is that no gas voids are identified in piping systems within scope.

Procedural controls require Issue Reports (IRs) to be initiated in the Corrective Action Program if voids are discovered during the UT examinations or periodic venting evolutions. The IR is then evaluated and dispositioned to determine the cause and identify appropriate corrective actions. 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 surveillance interval is considered if the cause is not confirmed or it is determined to be necessary to confirm operability of the systems. Additionally, results of examinations for gas accumulation are trended by Engineering, and would also be used as a basis for adjusting the surveillance interval.

NRC Request 6

Training was not identified in the GL, but is considered by the NRC staff to be a necessary part of applying procedures and other activities when addressing the issues identified in the GL. This was identified in the Reference 2 NEI template as an item that should be addressed in the GL. This is not addressed in your response. Please provide a brief description of planned training and its schedule.

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. However, when any station procedure is 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 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. Procedures that direct the periodic examination of selected piping for the presence of air draw upon pre-existing non-destructive examination (NDE) procedures, which provide guidance for the UT inspection of piping to verify that it is full of water. Close coordination with the NDE group and individuals performing the inspections was made during the procedure development. The NDE group assisted in development of the new procedure. Training of personnel performing UT inspection is in accordance with corporate 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. EGC plans to evaluate these training modules following completion for applicability to EGC, and may conduct training based upon modules tailored to meet EGC's needs.