

JAN 28 2011

LR-N11-0001

10CFR50.54f



U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-001

Hope Creek Generating Station Unit 1  
Facility Operating License Number NPF-57  
Docket Number 50-354

Subject: Post-NRC Inspection Supplemental Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"

- 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. PSEG LR-N08-0073, Three-Month Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems", dated April 10, 2008
  3. PSEG LR-N08-0225, Nine-Month Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems", dated October 13, 2008
  4. PSEG LR-N09-0170, Nine-Month Supplemental (Post Outage) Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems", dated July 30, 2009.

August 30, 2010 through September 2, 2010 NRC Inspectors from NRC Region I performed an inspection at Hope Creek in accordance with Temporary Instruction 2515/177, Revision 1 "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems". The purpose of the inspection was to verify that PSEG had implemented or was in the process of acceptably implementing the commitments, modifications, and programmatically controlled actions described in PSEG's responses (References 2 through 4) to Generic Letter 2008-01.

During that inspection the Region I inspectors uncovered an RHR system vent piping configuration that had not been identified or addressed in the above referenced PSEG responses to the Generic Letter.

This letter and its Enclosure documents this configuration and provides a description of PSEG's resolution of the configuration including: actions completed; testing and evaluations completed; PSEG's technical disposition; and, actions planned in the future.

A134  
NRR

This letter contains no new regulatory commitments.

If there are any questions regarding this correspondence, please contact Phil Duca at (856) 339-1640.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 1-28-11

Sincerely,



John F. Perry  
Site Vice President, Hope Creek.

Enclosure: PSEG's Post-NRC Inspection Supplemental Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems"

C. Mr. W. Dean, Administrator – Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

U.S. Nuclear regulatory Commission  
Mr. R. Ennis, Project Manager – Hope Creek  
Mail Stop 08B1A  
Washington, DC 20555-0001

USNRC Senior Resident Inspector – Hope Creek generating Station

Mr. P. Mulligan, Manager IV  
Bureau of Nuclear Engineering  
P. O. Box 415  
Trenton, NJ 08625

Corporate Commitment Management Coordinator

Hope Creek Commitment Management Coordinator

### Description

During the week of August 30<sup>th</sup> 2010, the NRC Region I performed an inspection of Hope Creek's efforts in response to GL 2008-01. On September 1<sup>st</sup> 2010, during a walk-down with the NRC in the A RHR Heat Exchanger room, it was identified that the heat exchanger inlet piping (18"-GBB-074) is configured in such a way that it is vulnerable to gas accumulation. As configured, the vent valves (BC-V558 and BC-V559) used to vent that segment of piping cannot perform a complete fill and vent. These vent valves are located at the top of an abandoned steam condensing mode pipe. The steam condensing mode line is an 8" pipe that is connected to the side of the heat exchanger inlet piping in a centerline arrangement. Because the pipe is connected in a centerline arrangement, the center of the 8" pipe ties into the center of the 18" pipe, leaving approximately 5" at the top of the 18" pipe unable to be vented through BC-V558 and BC-V559. This piping configuration vulnerability was not identified during Hope Creek's GL 2008-01 system reviews, and was not addressed during the original GL response.

### Actions taken to Date

Upon discovery of this issue, corrective action program (CAP) notifications were generated (20475892 and 20475716) and ultrasonic testing (UT) of the affected piping was completed. The UT (conducted on September 2, 2010) validated that the heat exchanger inlet piping was water solid with no air voids present.

Following maintenance on the 'A' and 'B' RHR loops during Hope Creek's H1R16 outage (October 15 to November 11, 2010), dynamic venting was used to ensure the above mentioned piping configuration was water solid. Additional UT's were performed to verify a water solid pipe. This provided further assurance that dynamic venting is capable of filling and venting this section of piping. Additional actions (discussed below) are planned to add dynamic venting to the system restoration procedure.

As an extent of condition evaluation, a systematic review was performed by Sargent & Lundy to identify potential similar gas accumulation configurations. The review focused on mechanical system configurations to verify that all areas are properly vented. Additional walk-downs were performed on the remaining vent valves used in both the system restoration and the monthly surveillance tests (STs) for RHR, Core Spray, and HPCI to ensure no other vulnerabilities were missed during the original GL 2008-01 review. No new areas of possible gas accumulation were identified.

An apparent cause evaluation (ACE) (Reference CAP Order 70113599, Operation 0010) was completed for the missed identification of the gas accumulation vulnerability. The main focus of this ACE was to review the involvement of Hope Creek personnel in the GL 2008-01 evaluations and whether the organizational and programmatic processes in place required improvement to prevent future issues. The evaluation determined that the apparent cause was a lack of process to ensure thorough examination and acceptance of technical products from external sources.

ENCLOSURE to LR-N11-0001

PSEG's Post-NRC Inspection Supplemental Response to NRC Generic Letter 2008-01,  
"Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and  
Containment Spray Systems"

Page 2 of 2

Procedure CC-AA-103-1008, "Owners Acceptance Review of External Technical Products", issued on December 17, 2010 will ensure a consistent process for accepting technical documents. This new procedure will improve the quality of all future reviews of external technical products.

Future Actions.

An evolution plan is being developed to gather empirical data that will be used to create dynamic venting instructions for the 'A' and 'B' RHR heat exchanger inlet piping. These dynamic venting instructions will be used as part of system restoration whenever the inlet piping to the RHR heat exchanger is drained.

Monthly UTs are being performed on the RHR heat exchanger inlet piping for a period of three months to validate the monthly surveillance test results. This will affirm that dynamic venting will only be required during the system restoration process. Dynamic venting will remain the current method for removing any voids in this piping, however, a modification to install vent valves will be pursued via the normal modification request and approval process.