



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 12, 2011

Mr. David A. Heacock
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: SURRY POWER STATION, UNIT NOS. 1 AND 2 (SURRY) – CLOSEOUT OF
GENERIC LETTER 2008-01, "MANAGING GAS ACCUMULATION IN
EMERGENCY CORE COOLING, DECAY HEAT REMOVAL, AND
CONTAINMENT SPRAY SYSTEMS" (TAC NOS. MD7884 AND MD7885)

Dear Mr. Heacock:

On January 11, 2008, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (Agencywide Documents Access and Management System (ADAMS), Accession No. ML072910759). The stated purpose of GL 2008-01 was (a) to request addressees to submit information to demonstrate that the subject systems are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance; and (b) to collect the requested information to determine if additional regulatory action is required.

GL 2008-01 requested that licensees provide the following information within 9 months of the date of the GL:

- (a) A description of the results of evaluations that were performed pursuant to requested actions specified in the GL. The description was to provide sufficient information to demonstrate that you are or will be in compliance with the quality assurance criteria in Sections III, V, XI, XVI, and XVII of Appendix B to Title 10 of the *Code of Federal Regulations*, Part 50 and the licensing basis and operating license as those requirements apply to the subject systems;
- (b) A description of all corrective actions, including plant, programmatic, procedure, and licensing basis modifications that you determined were necessary to assure compliance with these regulations; and,
- (c) A statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

Regarding Item c, some licensees typically had to wait for a refueling outage to access parts of the plant that were inaccessible at power. Consequently, they provided or plan to provide supplementary responses following the outage. The Office of Nuclear Reactor Regulation (NRR) staff has reviewed the supplementary responses where available, and the NRC Regional Office will address responses that have not been included in the NRR review.

By letters dated October 14, 2008 (ADAMS Accession No. ML082890094), November 3, 2008 (ADAMS Accession No. ML083090065), July 6, 2009 (ADAMS Accession No. ML091871307), and June 8, 2010 (ADAMS Accession No. ML101600115), Virginia Electric and Power Company (VEPCO, the licensee), provided responses to GL 2008-01. The NRC staff has reviewed the licensee's responses and has documented the evaluation in Suggestions for the Surry Inspection Using the Guidance Provided in Temporary Instruction 2515/177 (ADAMS Accession No. ML103490232, non-publicly available).

The NRC staff has reviewed VEPCO's responses and has determined that the licensee has acceptably addressed each request.

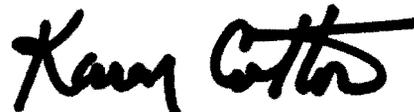
- Request for Additional Information (RAI) 1 asked for a regulatory commitment and schedule for applying the Technical Specification Task Force (TSTF) process to any Technical Specification (TS) changes resulting from GL 2008-01. VEPCO provided a commitment to evaluate the NRC-approved TSTF and to submit a license amendment if one is determined necessary within 1 year of NRC approval. The NRC staff concludes that this acceptably addresses the question.
- RAI 2 addressed surveillance frequency, venting, and sampling. The licensee stated that full flow testing and system sweeping are performed every outage. Procedure revisions were made to address the use of 4 new vent valve locations. Static venting is performed at highpoints upon return to service and on a quarterly basis. Void size is primarily measured by a timed release using a rotometer. After initial discovery of gas, ultrasonic testing will be used to more accurately estimate the amount and rate of gas accumulation. The licensee has determined that the only sources of gas are hydrogen and air; therefore they do not require sampling or chemical analysis of the voids. The NRC staff concludes that this acceptably addresses the question and the approach is acceptable.
- RAI 3 addressed improvements to prevent gas intrusion. VEPCO developed ultrasonic test procedures and enhanced maintenance procedures to ensure leak tightness of valves. The Emergency Core Cooling System (ECCS) Gas Accumulation Monitoring Plan directs review of ECCS design modifications and procedural changes for the possibility of increased susceptibility to gas intrusion. The NRC staff concludes that this acceptably addresses the question and the approach is acceptable.
- RAI 4 addresses training associated with gas accumulation and management. VEPCO is participating in the industry Gas Accumulation Team initiatives. They have received the Institute of Nuclear Power Operations (INPO) training modules on gas accumulation and management and plan to incorporate them into their training program. The NRC staff concludes that this acceptably addresses the question and the approach is acceptable.
- RAI 5 addressed the "alternate monitoring methodology" mentioned in VEPCO's 9-month response. Additional monitoring activities include back leakage testing of safety injection (SI) check valves, thermal relief valve lift and low-head SI (LHSI) pump discharge pressure during quarterly testing, LHSI discharge header temperature monitoring, and refueling water storage tank in-leakage monitoring. Degassing of hydrogen saturated reactor coolant system leakage into SI systems is a primary contributor to accumulated gas at Surry. The aforementioned monitoring activities are ways to detect if this particular

precursor to gas accumulation is occurring. The NRC staff concludes that this acceptably addresses the question.

The NRC staff has concluded that the licensee has acceptably demonstrated "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," as stated in GL 2008-01. We are continuing to engage with stakeholders regarding the creation of durable guidance for Gas Management which may require additional actions by the licensee beyond the scope of GL 2008-01. An inspection, using Temporary Instruction (TI) 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)" (ADAMS Accession No. ML082950666) may be performed by the NRC's Region II staff. TI 2515/177 is confirmatory in nature in that it directs NRC inspectors to selectively verify that the licensee has implemented or is in the process of acceptably implementing the commitments, modifications, and programmatically controlled actions described in the licensee's response to GL 2008-01 and the plant-specific information supports a conclusion that subject systems operability is reasonably ensured.

If you have any questions regarding this letter, please feel free to contact me at (301) 415-1438.

Sincerely,

A handwritten signature in black ink that reads "Karen Cotton". The signature is written in a cursive, flowing style.

Karen Cotton, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

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/RA/

Karen Cotton, Project Manager
 Plant Licensing Branch II-1
 Division of Operating Reactor Licensing
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*by memo dated 3/22/11

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