



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

June 27, 2012

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, UNITS 1 AND 2 – CLOSEOUT OF BULLETIN  
2011-01, "MITIGATING STRATEGIES" (TAC NOS. ME6489 AND ME6490)

Dear Mr. Heacock:

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, "Mitigating Strategies" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11250360), to all holders of operating licenses for nuclear power reactors, except those that have permanently ceased operation and have certified that fuel has been removed from the reactor vessel. The purpose of the bulletin was to obtain a comprehensive verification that licensees' mitigating strategies to maintain or restore core cooling, spent fuel cooling, and containment following a large explosion or fire were compliant with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(hh)(2).

The bulletin required two sets of responses pursuant to the provisions of 10 CFR 50.54(f). Surry Power Station (Surry), Units 1 and 2, provided its responses to the bulletin by letters dated June 10 and July 8, 2011 (ADAMS Accession Nos. ML11171A065 and ML11192A212 respectively). By letter dated November 17, 2011 (ADAMS Accession No. ML11314A168), the NRC sent the licensee a request for additional information (RAI) on its July 8, 2011, response. The licensee responded to the RAI by letter dated December 15, 2011 (ADAMS Accession No. ML12003A243).

The NRC staff has reviewed the information submitted by Surry, Units 1 and 2, and concludes that its response to the bulletin is acceptable. As summarized in the enclosure, the NRC staff verified that the licensee provided the information requested in the bulletin. No further information or actions under the bulletin are requested.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Cotton", written over a horizontal line.

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

Enclosure: Summary of NRC Bulletin 2011-01 Response Review

cc w/ encl: Distribution via Listserv

SUMMARY OF NRC BULLETIN 2011-01

"MITIGATING STRATEGIES" RESPONSE REVIEW

SURRY POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-280 AND 50-281

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, "Mitigating Strategies," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML111250360) to all holders of operating licenses for nuclear power reactors, except those that have permanently ceased operation and have certified that fuel has been removed from the reactor vessel. The bulletin required two sets of responses pursuant to the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(f). The first responses were due 30 days after issuance of the bulletin. By letter dated June 10, 2011 (ADAMS Accession No. ML11171A065), Surry Power Station (SPS), Units 1 and 2 provided its response to this first set of questions (first response). The second responses were due 60 days after issuance of the bulletin. By letter dated July 8, 2011 (ADAMS Accession No. ML11192A212), SPS provided its response to this second set of questions (second response). By letter dated November 17, 2011 (ADAMS Accession No. ML11314A168), the NRC sent a request for additional information (RAI) on the second response. SPS responded to the RAI by letter dated December 15, 2011 (ADAMS Accession No. ML12003A243). As summarized below, the NRC staff has verified that SPS provided the information requested in the bulletin.

**1.0 Background**

On February 25, 2002, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (ICM Order). Section B.5.b of the ICM Order required licensees to develop specific guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities using readily available resources (equipment and personnel) that can be effectively implemented under the circumstances associated with the loss of large areas of the plant due to explosions or fire.

By letter dated August 2, 2007 (ADAMS Accession No. ML072120442), the NRC staff issued its Safety Evaluation (SE) to document the final disposition of information submitted by SPS regarding Section B.5.b of the ICM Order. Along with the SE, the staff issued a conforming license condition to incorporate the B.5.b mitigating strategies into the licensing basis.

On March 27, 2009, the NRC issued 10 CFR 50.54(hh)(2) as a new rule, in order to capture the B.5.b mitigating strategies and related license conditions as regulatory requirements for both current and future licensees. At that time, licensee compliance with the conforming license conditions was sufficient to demonstrate compliance with 10 CFR 50.54(hh)(2) (74 FR 13926) so no further actions were required on the part of current licensees.

Enclosure

## **2.0 30-DAY REQUEST**

In order to confirm continued compliance with 10 CFR 50.54(hh)(2), the bulletin requested that licensees address the following two questions within 30 days of issuing the bulletin:

1. Is the equipment necessary to execute the mitigating strategies, as described in your submittals to the NRC, available and capable of performing its intended function?
2. Are the guidance and strategies implemented capable of being executed considering the current configuration of your facility and current staffing and skill levels of the staff?

The NRC staff reviewed VCSNS's first response to determine if it had adequately addressed these questions.

### **2.1 Question 1: Availability and Capability of Equipment**

In its first response, VCSNS confirmed that equipment it needs to execute the 10 CFR 50.54(hh)(2) mitigating strategies is available and capable of performing its intended function. The NRC staff verified that this confirmation covered equipment needed for each of the three phases of B.5.b mitigation strategies. Therefore, the NRC staff finds that VCSNS has adequately responded to Question 1.

### **2.2 Question 2: Guidance and Strategies Can Be Executed**

In its first response, VCSNS confirmed that the guidance and strategies it has implemented for 10 CFR 50.54(hh)(2) are capable of being executed considering the current facility configuration, staffing levels, and staff's skills. Since VCSNS has considered its current facility configuration, staffing levels, and staff's skills, and confirmed that it can execute its implemented guidance and strategies, the NRC staff finds that VCSNS has adequately responded to Question 2.

## **3.0 60-DAY REQUEST**

The bulletin required a response to the following five questions within 60 days of issuing the bulletin:

1. Describe in detail the maintenance of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed.
2. Describe in detail the testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it will function when needed.

The NRC staff reviewed SPS's submittals to determine if it had adequately addressed these questions. This was accomplished by verifying that the submittals listed equipment, training, and offsite resources which were relied upon to make conclusions in the August 2, 2007, SE or are commonly needed to implement the mitigating strategies.

### **3.1 Questions 1 and 2: Maintenance and Testing of Equipment**

Questions 1 and 2 of the 60-day request required licensees to describe in detail the maintenance and testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed. In its second response, SPS listed the equipment used to support the 10 CFR 50.54(hh)(2) mitigating strategies which receives maintenance or testing. For each item, SPS described the maintenance and testing performed, including the frequency and basis for the maintenance or testing activity.

The NRC staff verified that SPS listed equipment that typically requires maintenance or testing which was relied upon to make conclusions in the SE or commonly needed to implement the mitigating strategies. In its second response, SPS stated that the portable pump, portable power supply, hoses, and communications equipment receive maintenance or testing. The NRC staff noted that the condition of nozzles is verified as part of the inventory. The NRC staff noted that refueling of the portable pump is a maintenance activity. SPS also identified other items that support the mitigating strategies that receive maintenance or testing.

The NRC staff verified that SPS described the process used for corrective actions and listed the testing performed to ensure that the strategies were initially feasible. SPS stated in its second response that its 10 CFR Part 50, Appendix B, corrective action program is used to document equipment failure, establish priorities, and perform trending.

Based upon the information above, the NRC staff finds that SPS has provided the information requested by Questions 1 and 2.

### **3.2 Question 3: Controls on Equipment**

Question 3 of the 60-day request required licensees to describe in detail the controls on equipment, such as inventory requirements, to ensure that the equipment is available when needed. A list of inventory deficiencies and associated corrective actions to prevent loss was also requested.

The NRC staff verified that SPS described its process for ensuring that B.5.b equipment will be available when needed. In its second response, SPS identified equipment included in its inventory, the inventory frequency, storage requirements, and items verified. Items verified include proper quantity, location, and accessibility of equipment; compressed gas bottle pressures; calibrations; equipment shelf lives; and controls on storage locations. SPS states that at the time of its second response there were no outstanding inventory deficiencies that would render the strategies not viable.

The NRC staff verified that SPS inventoried equipment which was relied upon to make conclusions in the SE or commonly needed to implement the mitigating strategies. In its second response, SPS stated that procured non-permanently installed B.5.b equipment stored in the warehouse is inventoried every three years and all other B.5.b equipment is inventoried at least

annually in accordance with station procedures. The second response specifically states that the following items are included in the inventory: portable pump; emergency response vehicle; portable power supply; hoses; communications equipment; nozzles; connectors; and firefighter turnout gear. In its RAI response, SPS described how it ensures the availability of air bottles that can be used to manually depressurize the steam generators. SPS also identified other items that support the mitigating strategies that are inventoried.

Based upon the information above, the NRC staff finds that SPS has provided the information requested by Question 3.

### **3.3 Question 4: Configuration and Guidance Management**

Question 4 of the 60-day request required licensees to describe in detail how configuration and guidance management is assured so that the strategies remain feasible.

The NRC staff verified that SPS described its measures to evaluate plant configuration changes for their effects on the mitigating strategies and to ensure its procedures are current. In its second response, SPS stated that the design change process requires a review of affected procedures and that procedure changes are validated to ensure that the B.5.b mitigating strategies remain viable. SPS stated that it has two nuclear engineering standards in place to address the evaluation of any plant configuration changes for their effect on the mitigating strategies.

The NRC staff verified that SPS described measures it has taken to validate the procedures or guidelines developed to support the mitigating strategies. In its second response, SPS identified testing in response to Question 2 that demonstrated the ability to execute some strategies. SPS also states that "initially, mitigating strategies were validated by walk downs, engineering evaluations, and table top reviews" and they were similarly revalidated in 2011.

The NRC staff verified that SPS described the training program implemented in support of the mitigating strategies and how its effectiveness is evaluated. In its second response, SPS identified the training provided to its operations personnel, emergency response organization key decision makers, security personnel, fire brigade, and other personnel. SPS also identified the frequency with which each type of training is provided and the methods for training evaluating.

Based upon the information above, the NRC staff finds that SPS has provided the information requested by Question 4.

### **3.4 Question 5: Offsite Support**

Question 5 of the 60-day request required licensees to describe in detail how offsite support availability is assured.

The NRC staff verified that SPS listed the offsite organizations it relies upon for emergency response, including a description of agreements and related training. The NRC staff compared the list of offsite organizations that SPS provided in its second response with the information relied upon to make conclusions in the SE. SPS stated that it maintains letters of agreement, contracts, and purchase orders with these offsite organizations. The letters of agreement are reviewed annually, and all agreements were current at the time of its second response. SPS also described the training and site familiarization it provides to these offsite organizations. SPS

stated that it reviewed its corrective action program back to 2008 and found two issues involving agreements related to offsite support for B.5.b events. In both cases, SPS determined that sufficient offsite resources were available through other offsite agreements it maintained. Based upon the information above, the NRC staff finds that SPS has provided the information requested by Question 5.

#### **4.0 CONCLUSION**

As described above, the NRC staff has verified that SPS has provided the information requested in Bulletin 2011-01. Specifically, SPS responded to each of the questions in the bulletin as requested. The NRC staff concludes that SPS has completed all of the requirements of the bulletin and no further information or actions under the bulletin are needed.

June 27, 2012

Mr. David A. Heacock  
President and Chief Nuclear Officer  
Virginia Electric and Power Company  
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Sincerely,  
**/RA by VSreenivas for/**  
Karen Cotton, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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