



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

May 31, 2012

Site Vice President, Operations
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 250
Governor Hunt Road
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION – CLOSEOUT OF
BULLETIN 2011-01, "MITIGATING STRATEGIES" (TAC NO. ME6496)

Dear Sir or Madam:

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01 (Bulletin), "Mitigation Strategies," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 11250360), to all holders of operating licenses for nuclear power reactors, except those that have permanently ceased operation and have certified that their fuel has been removed from the reactor vessel. The purpose of the bulletin was to obtain a comprehensive verification that the licensees' mitigating strategies to maintain or restore core cooling, spent fuel cooling, and containment cooling, 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 provisions of 10 CFR 50.54(f). A 30-day response to questions to confirm continued compliance with 10 CFR 50.54(hh)(2), and a 60-day response to address questions on how the compliance was achieved. Entergy Nuclear Operations, Inc., the licensee for Vermont Yankee Nuclear Power Station, provided its responses to the bulletin by letters dated June 9 and July 11, 2011 (ADAMS Accession Nos. ML11166A133 and ML11195A018). By letter dated November 9, 2011 (ADAMS Accession No. ML113081430), the NRC sent the licensee a request for additional information (RAI) for its July 11, 2011, response. The licensee responded to the RAI by letter dated December 8, 2011 (ADAMS Accession No. ML11348A232).

The NRC staff has performed the enclosed review of the information submitted by the licensee and concludes that the licensee has provided the information requested in the bulletin. The licensee has responded to each of the questions in the bulletin as requested.

Based on its review, the NRC staff concludes that the licensee has completed all of the requirements of the bulletin and no further information or actions under the bulletin are needed.

Activities for TAC No. ME6496 are complete, and the TAC has been closed.

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Please contact me at (301) 415-1030 if you have any questions on this issue.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Guzman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure:
Staff Evaluation

cc w/encl: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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STAFF REVIEW BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO BULLETIN 2011-01

RENEWED FACILITY OPERATING LICENSE NO. DPR-28

ENTERGY NUCLEAR VERMONT YANKEE, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

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 response was due 30 days after issuance of the bulletin. The second response was due within 60 days from the issuance of the bulletin. By letter dated June 9, 2011 (ADAMS Accession No. ML11166A133), the licensee for Vermont Yankee Nuclear Power Station (VYNPS) provided its response to the first set of questions (first response). By letter dated July 11, 2011 (ADAMS Accession No. ML11195A018), the licensee provided its response to the second set of questions (second response). By letter dated November 9, 2011 (ADAMS Accession No. ML113081430), the NRC staff sent a request for additional information (RAI) on the second response. The licensee responded to the RAI by letter dated December 8, 2011 (ADAMS Accession No. ML11348A232). As summarized below, the NRC staff has verified that the licensee provided the information requested in the bulletin.

2.0 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 cooling, 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.

Enclosure

By letter dated August 23, 2007 (ADAMS Accession No. ML072340003), the NRC staff issued its Safety Evaluation (SE) to document the final disposition of information submitted by the licensee 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.

3.0 30-DAY RESPONSE

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 from the date of the bulletin:

- Question 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?
- Question 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 the licensee's first response as follows, to determine if it had adequately addressed these questions.

Question 1: Availability and Capability of Equipment

In its first response, the licensee 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 the licensee has adequately responded to Question 1.

Question 2: Guidance and Strategies Can Be Executed

In its first response, the licensee 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 the licensee 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 the licensee has adequately responded to Question 2.

4.0 60-DAY RESPONSE

The bulletin required a response to the following five questions within 60 days from the date of issuance of the bulletin:

- Question 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.
- Question 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.
- Question 3 Describe in detail the controls for ensuring that the equipment is available when needed.
- Question 4 Describe in detail how configuration and guidance management is ensured so that strategies remain feasible.
- Question 5 Describe in detail how you ensure availability of offsite support.

The NRC staff reviewed licensee's submittals to determine if it had adequately addressed these questions. The NRC staff also reviewed the August 23, 2007, SE to determine what equipment, training, and offsite resources at VYNPS were relied upon by NRC staff to conclude that the licensee's actions would ensure compliance with Section B.5.b of the ICM Order and the conforming license condition.

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, the licensee listed the equipment used to support the 10 CFR 50.54(hh)(2) mitigating strategies which receives maintenance or testing. For each item, the licensee described the maintenance and testing performed, including the frequency and basis for the maintenance or testing activity.

The NRC staff verified that the licensee listed equipment that typically requires maintenance or testing which was relied upon to draw conclusions about safety or commonly needed to implement the mitigating strategies. In its second response, the licensee stated that the portable pump, portable power supply, hoses, and communications equipment receive maintenance or testing. The licensee did not identify any maintenance or testing of monitor nozzles, spray nozzles, or similar devices in its second response. In its RAI response, the licensee stated that only monitor nozzles were procured to support B.5.b mitigating strategies, they were successfully tested on November 25, 2011, and they will be annually tested to ensure functionality. The NRC staff noted that the fuel level for the portable pump is verified during maintenance. The licensee also identified other items that support the mitigating strategies that receive maintenance or testing.

The NRC staff verified that the licensee described the process used for corrective actions and listed the testing performed to ensure that the strategies were initially feasible. The licensee 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 concludes that the licensee has provided the information requested by bulletin Questions 1 and 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 the licensee has described its process for ensuring that B.5.b equipment will be available when needed. In its second response, the licensee identified equipment included in its inventory, the inventory frequency, storage requirements, and items verified. Items verified include proper quantity, location, and accessibility of equipment. The licensee 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 the licensee inventoried equipment which was relied upon to draw safety conclusions or commonly needed to implement the mitigating strategies. In its second response, the licensee stated that procured, non-permanently installed, B.5.b equipment is inventoried in accordance with station procedures. The second response specifically stated that the following items are included in the inventory: portable pump; tow vehicle; portable power supplies; hoses; communications equipment; nozzles; adapters; and compressed gas bottles. The NRC staff noted that firefighter turnout gear and instruments were not listed in the second response. The second response also did not specify a minimum inventory frequency for B.5.b equipment which would cover equipment not specifically listed. In response to an RAI about this issue, the licensee described its inventory controls on firefighting equipment and turnout gear and stated that all other B.5.b related instruments were included in the second response. The licensee also identified other items that support the mitigating strategies that are inventoried.

Based upon the information above, the NRC staff finds that the licensee has provided the information requested by Question 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 the licensee 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, the licensee stated that plant configuration changes are procedurally evaluated against the licensing basis, which includes the B.5.b mitigating strategies. The licensee states 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.

The NRC staff verified that the licensee has described measures it has taken to validate the procedures or guidelines developed to support the mitigating strategies. In its second response,

the licensee identified testing in response to Question 2 that demonstrated the ability to execute some strategies. The licensee stated that "initially, mitigating strategies were validated by walkdowns, engineering evaluations, and/or table top reviews" and they were similarly revalidated in 2011.

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

Based upon the above provided information, the NRC staff finds that the licensee has provided the information requested by the bulletin Question 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 the licensee 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 the licensee provided in its second response with the information relied upon to draw conclusions about safety. The NRC staff noted that the licensee did not identify any local law enforcement agencies in its second response. In its RAI response, the licensee described how it assures the availability of several local law enforcement agencies to respond to a B.5.b event. The licensee stated that it maintains letters of agreement or contacts with these offsite organizations, which are reviewed annually, and that these agreements were current at the time of its second response. The licensee also described the training and site familiarization it provides to these offsite organizations. The licensee stated that it reviewed its corrective action program back to 2008 and found no issues involving lapsed agreements related to offsite support for B.5.b events.

Based upon the information above, the NRC staff finds that the licensee has provided the information requested by in the bulletin Question 5.

5.0 CONCLUSION

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

Principal Contributor: B. Purnell

Date: May 31, 2012

Please contact me at (301) 415-1030 if you have any questions on this issue.

Sincerely,

/ra/

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure:
Staff Evaluation

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