



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

August 17, 2012

Mr. Richard L. Anderson
Vice President
Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC
3277 DAEC Road
Palo, IA 52324-9785

SUBJECT: DUANE ARNOLD ENERGY CENTER – CLOSEOUT OF BULLETIN 2011-01,
“MITIGATING STRATEGIES” (TAC NO. ME6429)

Dear Mr. Anderson:

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, “Mitigating Strategies,” 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). NextEra Energy Duane Arnold, LLC (Duane Arnold, the licensee) provided its responses to the bulletin by letters dated June 10 and July 7, 2011, and January 12, 2012. The NRC staff has reviewed the information submitted and concludes that the licensee’s response to the bulletin is acceptable. As summarized in the enclosure, the NRC staff verified that NextEra-DA provided the information requested in the bulletin. No further information or actions under the bulletin are requested.

Sincerely,

A handwritten signature in black ink that reads "Karl D Feintuch".

Karl D. Feintuch, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosure: As stated

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SUMMARY OF BULLETIN 2011-01, "MITIGATING STRATEGIES" RESPONSE REVIEW

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

NEXTERA ENERGY DUANE ARNOLD, LLC

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

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 responses were due 30 days after issuance of the bulletin.

By letter dated June 9, 2011 (ADAMS Accession No. ML111610445), Duane Arnold Energy Center (Duane Arnold) 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 11, 2011 (ADAMS Accession No. ML111930033), Duane Arnold provided its response to this second set of questions (second response). On November 28, 2011 (ADAMS Accession No. ML113210581), the NRC issued a request for additional information (RAI) to which Duane Arnold responded by letter dated January 12, 2012 (ADAMS Accession No. ML120120139).

As summarized below, the NRC staff has verified that Duane Arnold 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, 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 9, 2007 (ADAMS Accession No. ML072180005), the NRC staff issued its safety evaluation (SE) to document the final disposition of information submitted by Duane Arnold regarding Section B.5.b of the ICM Order. Along with the SE, the staff issued a

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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, dated March 27, 2009) so no further actions were required on the part of current licensees.

3.0 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 Duane Arnold's first response to determine if it had adequately addressed these questions.

3.1 Question 1: Availability and Capability of Equipment

In its first response, Duane Arnold 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 Duane Arnold has adequately responded to Question 1.

3.2 Question 2: Guidance and Strategies Can Be Executed

In its first response, Duane Arnold 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 skills.

Since Duane Arnold has considered its current facility configuration, staffing levels, and staff skills, and confirmed that it can execute its implemented guidance and strategies, the NRC staff finds that Duane Arnold has adequately responded to Question 2.

4.0 60-DAY REQUEST

The bulletin required a response to each of 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.
3. Describe in detail the controls for ensuring that the equipment is available when needed.
4. Describe in detail how configuration and guidance management is ensured so that strategies remain feasible.
5. Describe in detail how you ensure availability of offsite support.

The NRC staff reviewed Duane Arnold'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 9, 2007, SE or are commonly needed to implement the mitigating strategies.

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

The NRC staff verified that Duane Arnold 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, Duane Arnold stated that the fire brigade truck, portable pump, portable power supply, hoses, and communications equipment receive maintenance or testing. Duane Arnold did not identify maintenance or testing of monitor nozzles, spray nozzles, or similar devices in its second response. In its RAI response, Duane Arnold stated that its equipment inventory includes nozzles and that its inventory process includes a visual inspection of the equipment. The NRC staff noted that the fuel level for the portable pump is verified during maintenance. Duane Arnold also identified other items that support the mitigating strategies that receive maintenance or testing.

The NRC staff verified that Duane Arnold described the process used for corrective actions and listed the testing performed to ensure that the strategies were initially feasible. Duane Arnold 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 Duane Arnold has provided the information requested by Questions 1 and 2.

4.2 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 Duane Arnold described its process for ensuring that B.5.b equipment will be available when needed. In its second response, Duane Arnold identified equipment included in its inventory, the inventory frequency, storage requirements, and items verified. Items verified included proper quantity and location of equipment. Duane Arnold 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 Duane Arnold inventoried equipment, which was relied upon to make conclusions in the SE, are commonly needed to implement the mitigating strategies. In its second response, Duane Arnold stated that procured non-permanently installed 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: fire brigade truck; portable pump; portable power supply; hoses; communications equipment; nozzles; and adapters. Firefighter turnout gear was not listed in response to Question 3, but was listed as undergoing periodic testing in response to Question 2 which would also ensure the availability of the equipment. Duane Arnold also identified other items that support the mitigating strategies that are inventoried.

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

4.3 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 Duane Arnold 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, Duane Arnold stated that plant configuration changes are procedurally required to be evaluated against the licensing basis, which includes the B.5.b mitigating strategies. Duane Arnold 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. In addition, B.5.b procedures are reviewed biennially to ensure they are up-to-date and consistent with current plant configuration.

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

The NRC staff verified that Duane Arnold described the training program implemented in support of the mitigating strategies and how its effectiveness is evaluated. In its second response, Duane Arnold identified the training provided to its operations personnel; emergency response personnel, including key decision makers; fire brigade; and security personnel. Duane Arnold 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 Duane Arnold has provided the information requested by Question 4.

4.4 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 Duane Arnold 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 Duane Arnold provided in its second response with the information relied upon to make conclusions in the SE. Duane Arnold stated that it maintains letters or other types of agreements with these offsite organizations, most of which are reviewed annually, and that no periods of lapsed agreements were identified. Duane Arnold also described the training and site familiarization it provides to these offsite organizations.

Based upon the information above, the NRC staff finds that Duane Arnold has provided the information requested by Question 5.

5.0 CONCLUSION

As described above, the NRC staff has verified that Duane Arnold has provided the information requested in Bulletin 2011-01. Specifically, Duane Arnold responded to each of the questions in the bulletin as requested.

The NRC staff concludes that Duane Arnold has completed all of the requirements of the bulletin and no further information or actions under the bulletin are needed.

Principal Contributor: Blake Purnell

Date of issuance: August 17, 2012

Mr. Richard L. Anderson
Vice President
Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC
3277 DAEC Road
Palo, IA 52324-9785

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Sincerely,

/RA/

Karl D. Feintuch, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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*Summary of review transmitted by memo (Accession No. ML121710267) of 6/28/2012.

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