



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

September 22, 2016

Mr. Eric McCartney
Site Vice President
Seabrook Station
NextEra Energy
626 Lafayette Rd.
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 – REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST TO ADOPT EMERGENCY ACTION LEVEL SCHEMES PURSUANT TO NEI 99-01, REVISION 6 (CAC NO. MF7439)

Dear Mr. McCartney:

By letter dated February 27, 2016 (Agencywide Documents Access and Management System Accession No. ML16068A128), NextEra Energy Seabrook, LLC submitted a license amendment request to adopt the emergency action level schemes pursuant to Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," at the Seabrook Station, Unit No. 1.

The U.S. Nuclear Regulatory Commission staff has determined that additional information is necessary to complete its review. The request for additional information is enclosed. The licensee has agreed to provide answers to the request for additional information by October 28, 2016.

If you have questions, please contact me at 301-415-2048 or by e-mail at Justin.Poole@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin C. Poole", with a long horizontal line extending to the right.

Justin C. Poole, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosure:
Request for Additional Information

cc w/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO ADOPT EMERGENCY ACTION LEVEL SCHEMES

PURSUANT TO NEI 99-01, REVISION 6

NEXTERA ENERGY SEABROOK, LLC

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

By letter dated February 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML16068A128), NextEra Energy Seabrook, LLC (NextEra, the licensee) requested approval for an emergency action level (EAL) scheme change for the Seabrook Station, Unit No. 1 (Seabrook). Seabrook proposes to revise its current EAL scheme to one based upon the Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors" (ADAMS Accession No. ML12326A805).

The requests for additional information (RAIs) listed below are needed to support the U.S. Nuclear Regulatory Commission (NRC) staff's continued technical review of the proposed EAL scheme change.

Note: Bracketed information references EAL initiating condition as referenced in NEI 99-01, Revision 6, which may be different from nomenclature used in the licensee's submittal.

RAI-Seabrook-1

Section 2.7, "Classification of Short-Lived Events," does not contain the guidance provided in Section 5.7 of NEI 99-01, Revision 6, which states, in part:

If an event occurs that meets or exceeds an EAL, the associated ECL (emergency classification level) must be declared regardless of its continued presence at the time of declaration.

Please explain why this key guidance from NEI 99-01, Revision 6, was omitted, or revise accordingly.

RAI-Seabrook-2

The technical basis discussion for RA3 [AA3] in NEI 99-01, Revision 6, states:

This IC (initiation condition) addresses elevated radiation levels in certain plant rooms/areas sufficient to preclude or impede personnel from performing actions necessary to maintain normal plant operation, or to perform a normal plant cooldown and shutdown.

Enclosure

The technical basis discussion for HA5 [HA5] in NEI 99-01, Revision 6, states:

This IC addresses an event involving a release of a hazardous gas that precludes or impedes access to equipment necessary to maintain normal plant operation, or required for a normal plant cooldown and shutdown.

The proposed Table H1 includes "Equipment Vaults" as a plant room/area that require access to operate equipment as noted above. It is not clear to the NRC staff what required equipment is contained within the "Equipment Vaults," or if there are additional rooms/areas that are identified as "Equipment Vaults" that do not contain equipment, but require access to perform actions (e.g., operate equipment) necessary to maintain normal plant operation or to perform a normal plant cooldown and shutdown.

For EAL RA3 [AA3] and HA5 [HA5], please address the following:

- a. Please clarify what required equipment is contained in the "Equipment Vaults" identified in Table H1. Additionally, please provide justification for using the potentially vague room/area designation of "Equipment Vaults" as this designation could potentially impact a timely and accurate classification, or revise accordingly.
- b. Table H1 indicates that access to the containment is required in Operating Modes 3 and 4. Please explain why access is required to the containment building for Mode 3 and 4 operations, or revise accordingly. This explanation should include (1) a listing of the specific areas of the containment for which access is required in Operating Modes 3 and 4, and (2) what procedural requirements necessitate access for performing actions necessary to maintain normal plant operation or to perform normal plant cooldown and shutdown.
- c. Table H1 indicates that access to the entire turbine building is required for Operating Modes 1, 2, and 3. Please explain why access is required to the entire turbine building for Operating Modes 1, 2, and 3 operations, or revise accordingly. This explanation should include (1) a listing of the specific areas of the turbine building for which access is required in Operating Modes 1, 2, and 3, and (2) what procedural requirements necessitate access for performing actions necessary to maintain normal plant operation or to perform normal plant cooldown and shutdown.

RAI-Seabrook-3

For RU1 [AU1], EAL 1, the assessment criteria is based on one of the listed radiation monitors being greater than 2 times the offsite dose calculation manual (ODCM) limits. In addition to providing a list of site-specific monitors, the developer's guidance in NEI 99-01, Revision 6, states:

Radiation monitor readings should reflect values that correspond to a radiological release exceeding 2 times a release control limit.

Please explain how an assessment of this EAL can be performed in a timely and accurate manner, without including instrument values that represent 2 times the ODCM limits, or revise accordingly.

RAI-Seabrook-4

Please provide justification for not including power supply tables for EALs MA1 [SA1], MU1 [SU1], and CU2 [CU2], based on NRC staff resolution provided in Emergency Preparedness Frequently Asked Question (EPFAQ) No. 2015-15 (ADAMS Accession No. ML16166A191), or revise accordingly.

RAI-Seabrook-5

For EALs MG8 [SG8], MG1 [SG1], MS1 [SS1], and CA2 [CA2], please provide justification for including a discussion related to a specific power source that could compel a decision-maker to make a declaration, even though mitigation strategies are effective, or revise accordingly.

RAI-Seabrook-6

For EALs CU5 [CU5] and MU6 [MU6], please address the following:

- a. Criteria lists "all plant telephones" as an acceptable communication method. This could imply that an EAL would not have to be declared as long as there was at least one functioning telephone on site. Please provide justification that supports the use of "all plant telephones," which addresses how this condition could be assessed in a timely and accurate manner.
- b. Criteria lists cellular telephones as an acceptable method of communication for offsite communications. As stated in NEI 99-01, Revision 6, communication methods with the offsite response organizations and the NRC should be "...described in the site Emergency Plan." Section 7 of the Seabrook Site Emergency Plan, which describes communication methods, does not include cellular phones. Please provide justification for listing cellular phones as a method of communication, or revise accordingly.

RAI-Seabrook-7

For the fuel clad and reactor coolant system (RCS) fission product barriers, RED entry conditions for the heat sink critical safety function (CSF) are used as a threshold for a potential loss of the barrier. However, NEI 99-01, Revision 6, guidance states:

In accordance with EOPs (emergency operating plans), there may be unusual accident conditions during which operators intentionally reduce the heat removal capability of the steam generators; during these conditions, classification using threshold is not warranted."

This guidance is included in the barrier threshold basis discussions; however, it is not included in the relevant barrier thresholds.

Please explain why the NEI 99-01, Revision 6, guidance concerning making classifications for heat sink conditions when operators intentionally reduce heat removal capability, in accordance with EOPs, is not included in the fission product barrier thresholds, or revise accordingly.

RAI-Seabrook-8

Concerning EAL HG1 [HG1], NRC staff resolution to EPFAQ 2015-13 (ADAMS Accession No. ML16166A366) was recently approved, which provides guidance that could be used, if deemed appropriate, to meet the intent of HG1 [HG1]. Please consider EPFAQ 2015-13 and revise EAL HG1 [HG1], if deemed appropriate, to reflect the latest staff clarification of NEI 99-01, Revision 6, guidelines.

RAI-Seabrook-9

EAL HU4 [HU4] (2) in NEI 99-01, Revision 6, states:

Receipt of a single fire alarm (i.e., no other indications of a FIRE).

The NEI 99-01, Revision 6, technical basis for HU4 [HU4] (2) further states:

A single fire alarm, absent other indication(s) of a FIRE, may be indicative of equipment failure or a spurious activation, and not an actual FIRE. For this reason, additional time is allowed to verify the validity of the alarm. The 30-minute period is a reasonable amount of time to determine if an actual FIRE exists; however, after that time, and absent information to the contrary, it is assumed that an actual FIRE is in progress.

The proposed HU4 [HU4] (2) includes an exception for the containment based on the following note:

A containment fire alarm is considered valid upon receipt of an actuated alarm on CP-376, combined with any of the following:

- CP 376 panel - Multiple Zones Actuated
- Plant Equipment - Spuriously Operating
- Containment Temperature - Increasing
- Containment Particulate Radiation - Increasing

Please provide further justification for the apparent deviation from the NRC-endorsed guidance provided by NEI 99-01, Revision 6, for the receipt of a single fire alarm. For example, this could potentially cause confusion with a declaration under EALs MA9 [SA9] and CA6 [CA6], where a containment fire causes spurious operation of equipment, e.g., is a rise in containment temperature or spurious operation of equipment to be considered as indications of degraded performance per MA9 [SA9] and CA6 [CA6]?

RAI-Seabrook-10

EAL HU4 [HU4] (4) in NEI 99-01, Revision 6, states:

A FIRE within the plant or ISFSI (for plants with an ISFSI outside the plant Protected Area) PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.

The proposed EAL HU4 [HU4] (4) does not include the independent spent fuel storage installation (ISFSI) (referred to as dry fuel storage facility).

Please explain why the dry fuel storage facility was not included for fires that require an offsite fire response to extinguish, or revise accordingly.

RAI-Seabrook-11

For EALs MU5 [SU5], MA5 [SA5], and MS5 [SS5], a power level (< 5%) was added to the EALs. The intent of NEI 99-01, Revision 6, is to align the above EAL classifications with site-specific EOP criteria of a successful reactor shutdown, as the consistency between EALs and EOPs would benefit the decision-makers by providing consistent criteria. The power level provided in the NEI 99-01, Revision 6, developer notes is an example that represents a typical EOP indication for a generic power plant.

Please consider either using the same EOP reactor shutdown criteria that the operators use in the EOPs or operator training, or consider using wording similar to the guidance in NEI 99-01, Revision 6.

RAI-Seabrook-12

For EAL MS5 [SS5], the second paragraph in the technical basis includes a discussion that classifications from MS5 [SS5] may be at a higher level than what would be determined by the fission product barrier recognition category. Although this may be true for some licensees, the Seabrook fission product barrier recognition category for either core cooling or heat sink CSF red entry conditions met would result in a site area emergency based solely on the fission product barrier recognition category. Please provide an explanation for including a discussion that does not appear to be specific to Seabrook, or revise accordingly.

RAI-Seabrook-13

EAL MA1 [SA1] (1) in NEI 99-01, Revision 6, states:

- a. AC (alternating current) power capability to (site-specific emergency buses) is reduced to a single power source for 15 minutes or longer.

AND

- b. Any additional single power source failure will result in a loss of all AC power to SAFETY SYSTEMS.

For EAL MA1 [SA1], the condition that any additional single power source will result in a loss of all AC power to SAFETY SYSTEMS was removed from the proposed EALs as being redundant to the condition that AC power capability to both AC emergency buses E5 and E6 is reduced to a single power source for 15 minutes or longer. Although the conditions provided by NEI 99-01, Revision 6, both include the term power source, they are not redundant.

Please explain in greater detail why the condition, "Any additional single power source failure will result in a loss of all AC power to SAFETY SYSTEMS," was removed from the proposed EAL MA1 [SA1], or revise accordingly.

RAI-Seabrook-14

For EAL MA2 [SA2], please address the following:

- a. As proposed, all core exit temperatures and all but one RCS temperature would not require a classification. Depending on the nature of the transient, an RCS temperature indication may or may not provide an accurate assessment of core conditions.

Please justify, including RCS temperature as an alternative to core exit temperatures, or revise accordingly.

- b. The Seabrook core cooling critical safety function status tree (CSFST) specifically uses reactor vessel level indication system (RVLIS) to assess the core cooling CSFST. However, the proposed EAL MA2 [SA2] uses pressurizer level. Depending on the nature of the transient, pressurizer level indication may or may not provide an accurate assessment of core conditions.

Please provide justification for not using RVLIS to determine RCS level for EAL MA2 [SA2], or revise accordingly.

September 22, 2016

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Site Vice President
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Justin C. Poole, Project Manager
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NAME	JPoole	LRonewicz	JAnderson	DBroadus	JPoole
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