

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
NEXTERA ENERGY SEABROOK, LLC
SEABROOK STATION INDEPENDENT SPENT FUEL STORAGE INSTALLATION
DOCKET NOS. 50-443, 72-63
EXEMPTION

1.0 BACKGROUND

NextEra Energy Seabrook, LLC (NextEra, the licensee) is the holder of Facility Operating License No. NPF-86, which authorizes operation of the Seabrook Station in Rockingham County, New Hampshire, pursuant to Title 10 of the Code of Federal Regulations (10 CFR), Part 50. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

Per 10 CFR Part 72, Subpart K, a general license is issued for the storage of spent fuel in an independent spent fuel storage installation (ISFSI) at power reactor sites to persons authorized to possess or operate nuclear power reactors under 10 CFR Part 50. NextEra holds a 10 CFR Part 72 general license for storage of spent fuel at the Seabrook Station ISFSI. Under the terms of the general license, NextEra is currently using the Transnuclear, Inc. (TN) NUHOMS[®] HD-32PTH cask model for storage of spent fuel, in accordance with Certificate of Compliance (CoC) 72-1030, Amendment No. 0.

2.0 REQUEST/ACTION

10 CFR 72.212(b)(7) requires compliance with the terms and conditions of the CoC for the cask model used under the general license for storage of spent fuel at power reactor sites. The TN NUHOMS® HD-32PTH dry cask storage system (CoC 72-1030, Amendment No. 0) is currently in use at the Seabrook Station ISFSI. CoC 72-1030 provides requirements, conditions, and operating limits in Appendix A, Technical Specifications (TS).

In a letter dated July 19, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102080256), NextEra requested an exemption from 10 CFR 72.212(b)(7). Specifically, NextEra requests exemption from the requirement in CoC 72-1030, Amendment No. 0, Appendix A, TS 5.2.5.b, to conduct a daily visual inspection of the horizontal storage module (HSM) air vents to ensure they are not blocked, as the surveillance activity to monitor HSM thermal performance. NextEra instead wishes to use a daily temperature measurement program as an alternate method of monitoring the thermal performance of the HSMs, as included in the proposed Amendment No. 1 to CoC 72-1030, which is not yet an approved amendment to a cask model in 10 CFR Part 72.

On its own initiative, the NRC staff, pursuant to 10 CFR 72.7, has expanded the scope of the exemption being granted to include 10 CFR 72.212(b)(2)(i)(A) and 10 CFR 72.214, in addition to 10 CFR 72.212(b)(7). These provisions are similar in requiring that the conditions of a specific CoC be met. 10 CFR 72.212(b)(2)(i)(A) requires a general licensee to perform written evaluations, prior to use of the cask, that establish that conditions set forth in the CoC have been met. 10 CFR 72.214 sets forth the list of casks approved for storage of spent fuel under the conditions specified in their CoCs.

3.0 DISCUSSION

Pursuant to 10 CFR 72.7, the Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations of 10 CFR Part 72 as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

Authorized by Law

This exemption would allow the licensee to discontinue the daily visual inspection of the HSM air vents to ensure they are not blocked (as required by CoC 72-1030, Amendment No. 0, TS 5.2.5.b for monitoring HSM thermal performance), and instead use a daily temperature measurement program as an alternate method of monitoring HSM thermal performance. The provisions in 10 CFR Part 72 that NextEra is requesting exemption from, limit the general licensee to cask models (and any amendments to cask models) approved under 10 CFR Part 72 and require general licensees to comply with the terms and conditions of the CoC for the approved cask model that they use.

As stated above, 10 CFR 72.7 allows the NRC to grant exemptions from the requirements of 10 CFR Part 72. The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

Will Not Endanger Life or Property or the Common Defense and Security

The underlying purpose of the provisions in 10 CFR 72.212(b)(2)(i)(A), 10 CFR 72.212(b)(7), and 10 CFR 72.214, is to limit 10 CFR Part 72 general licensees to use of cask models approved under the provisions of 10 CFR Part 72 (which are listed in 10 CFR 72.214) and require general licensees to comply with the terms and conditions of the CoC for the approved cask model that they use.

The exemption would allow NextEra to discontinue the daily visual inspection of the HSM air vents to ensure they are not blocked (as required by CoC 72-1030, Amendment No. 0, TS 5.2.5.b), and instead use a daily temperature measurement program as an alternate method of monitoring HSM thermal performance (as proposed in Amendment No. 1 to CoC 72-1030).

TN submitted an application for Amendment No. 1 to CoC 72-1030 on November 1, 2007 (ADAMS Accession No. ML073110525), as supplemented. In the Amendment No. 1 request, TN proposed adding use of a daily temperature measurement program as an alternate method of monitoring HSM thermal performance. Under the proposed Amendment No. 1, the cask user would have the option to either implement a daily visual inspection of the HSM air vents to ensure they are not blocked (TS 5.2.5.b in the current Amendment No. 0 and the proposed Amendment No. 1) or implement a daily temperature measurement program (TS 5.2.5.c in the proposed Amendment No. 1) to monitor HSM thermal performance.

NRC staff initially completed its technical review of the proposed Amendment No. 1 to CoC 72-1030 in October 2009, and the associated proposed rule and direct final rule were published in the *Federal Register* in May 2010. However, the proposed rule and direct final rule were withdrawn in July 2010, after TN identified an issue with imprecise TS language (not

related to TS 5.2.5). Since that time, the technical staff completed its review of TN's revised TS language in September 2010, and a revised rulemaking package (which includes the proposed CoC, proposed TS, and a preliminary Safety Evaluation Report (SER)) for Amendment No. 1 is currently in the rulemaking concurrence process. The proposed rule and direct final rule for Amendment No. 1 are expected to be published for comment in the *Federal Register* in January 2011. If the NRC does not receive any significant adverse comments on the proposed rule and direct final rule during the public comment period, then the rule would be effective (and Amendment No. 1 to CoC 72-1030 approved) in April 2011.

The NUHOMS[®] HD-32PTH system is designed to passively remove decay heat to assure integrity of the concrete HSM and fuel cladding, and the thermal monitoring requirements for the system are based on the ability of the system to function safely if obstructions in the air inlets or outlets impair airflow through the HSM for extended periods. The intent of the HSM thermal monitoring program is to prevent conditions that could lead to exceeding the concrete and fuel cladding temperature criteria. The proposed use of a temperature measurement program to monitor HSM thermal performance (as proposed in TS 5.2.5.c in the proposed Amendment No. 1 to CoC 72-1030) includes specific requirements for the cask system user to establish: appropriate administrative temperature limits to detect off-normal and accident blockage conditions before the HSM components and fuel cladding temperatures would exceed temperature design limits, and to ensure the HSM air vents are not blocked for more than 34 hours; temperature measurement locations; and corrective actions for potential temperature excursions.

The staff's current findings, with respect to the temperature measurement program proposed in Amendment No. 1 to CoC 72-1030 as an alternative method of monitoring HSM thermal performance, are: (1) there is reasonable assurance that a temperature measurement program

provides an equivalent level of assurance as the visual surveillance, in identifying and mitigating, if necessary, the effects of potential vent blockage; and thus, (2) addition of the option to use a daily temperature measurement program to monitor the thermal performance of the HSMs, as proposed by TN in TS 5.2.5.c in Amendment No. 1 to CoC 72-1030, is appropriate. These findings are reflected in the preliminary SER that is currently in the rulemaking concurrence process. The staff's current findings would be preserved in the final rule for Amendment No. 1 to CoC 72-1030, given there are no comments during the rulemaking concurrence process or significant adverse public comments on the future proposed rule and direct final rule that require changes to the HSM thermal monitoring program in TS 5.2.5.c.

In its exemption request, NextEra states that if granted the exemption, it will implement a daily temperature measurement program consistent with the proposed TS 5.2.5.c in the proposed Amendment No. 1 to CoC 72-1030. The staff has determined that the generic analysis supporting Amendment No. 1 to CoC 72-1030 would apply to the proposed exemption at the Seabrook Station ISFSI. Therefore, the staff concludes that the exemption does not pose an increased risk to public health and safety. This conclusion is conditional on: (1) NextEra implementing TS 5.2.5.c as proposed in Amendment No. 1 to CoC 72-1030, and (2) NextEra addressing any changes to the HSM thermal monitoring program in TS 5.2.5.c that may arise as a result of comments during the rulemaking concurrence process or significant adverse public comments on the future proposed rule and direct final rule for CoC 72-1030, Amendment No. 1.

Environmental Consideration

The staff also considered in its review of this exemption request, whether there would be any significant environmental impacts associated with the exemption. For this proposed action, the staff reviewed the categorical exclusion in 10 CFR 51.22(c)(25). 10 CFR 51.22(c)(25)(vi)(C)

provides a categorical exclusion for the granting of licensee exemption requests from NRC inspection or surveillance requirements. The proposed action is the approval of a licensee request for an exemption from the surveillance requirements contained in the technical specifications of the NRC issued CoC 72-1030, Amendment No. 0. The licensee proposes using a temperature measurement program in lieu of the visual surveillance required in the CoC technical specification. As a general matter, the staff has determined that there is reasonable assurance that a temperature measurement program provides an equivalent level of assurance as the visual surveillance, in identifying and mitigating, if necessary, the effects of any potential vent blockage.

In order for the 10 CFR 51.22(c)(25)(vi)(C) categorical exclusion to apply, the proposed action must meet the criteria listed in 10 CFR 51.22(c)(25)(i)-(v). An analysis of these provisions is provided below.

(a) 10 CFR 51.22(c)(25)(i) – There is no significant hazards consideration (NSHC)

The elements of a NSHC are set forth in 10 CFR 50.92(c)(1)-(3). The proposed action involves NSHC if approval of the proposed action would not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated; 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety.

Involve a significant increase in the probability or consequences of an accident previously evaluated. TS 5.2.5 in CoC 72-1030 requires a thermal monitoring program for the HSMs to prevent conditions that could lead to exceeding temperature limits for the concrete and fuel cladding. The proposed change to TS 5.2.5 in the proposed Amendment No. 1 to CoC 72-1030

provides additional flexibility to use a temperature measurement program, instead of a daily visual inspection of the HSM vents to ensure they are not blocked, as a surveillance activity to monitor HSM thermal performance. Use of the temperature measurement program in the proposed Amendment No. 1 to CoC 72-1030 will continue to meet the intent of the program to monitor thermal performance of the HSMs (to prevent conditions that could lead to exceeding the concrete and fuel cladding temperature criteria), as preliminarily determined by the NRC staff in its technical review of the proposed Amendment No. 1.

The exemption, which would change the method of monitoring thermal performance of the HSMs, would not involve any changes to the design, safety limits, or safety analysis assumptions associated with the cask system and would not create any new accident precursors. Therefore, there is no significant increase in the probability or consequences of an accident previously evaluated.

Create the possibility of a new or different kind of accident from any accident previously evaluated. The exemption, which if approved, would change the method of monitoring thermal performance of the HSMs, would not introduce any new accident initiators or create a new type of accident associated with the cask system. Therefore, the proposed exemption does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Involve a significant reduction in a margin of safety. The exemption, which if approved, would change the method of monitoring thermal performance of the HSMs, would not alter the design, safety limits, and safety analysis assumptions associated with the cask system. Therefore, the proposed exemption does not involve a significant reduction in a margin of safety.

Based on the above evaluation, the NRC staff finds that the 10 CFR 51.22(c)(25)(i) provision is met.

- (b) 10 CFR 51.22(c)(25)(ii) – There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite

The proposed exemption, which would change the method of monitoring thermal performance of the HSMs, would not involve any changes to effluents. Therefore, there is no significant change in the types or increase in the amounts of effluents that may be released offsite.

- (c) 10 CFR 51.22(c)(25)(iii) – There is no significant increase in individual or cumulative public or occupational radiation exposure

The proposed exemption, which would change the method of monitoring thermal performance of the HSMs, would not involve any changes to public or occupational radiation exposures. Therefore, there is no significant increase in individual or cumulative public or occupational radiation exposure.

- (d) 10 CFR 51.22(c)(25)(iv) – There is no significant construction impact

The proposed exemption, which would change the method of monitoring thermal performance of the HSMs, would not involve any construction activities. Therefore, there is no significant construction impact.

- (e) 10 CFR 51.22(c)(25)(v) – There is no significant increase in the potential for or consequences from radiological accidents

The proposed exemption, which would change the method of monitoring thermal performance of the HSMs, would not involve any changes to the design, safety limits, or safety analysis assumptions associated with the cask system and would not create any new accident precursors. Therefore, there is no significant increase in the potential for or consequences from radiological accidents.

As this exemption request meets all of the provisions in 10 CFR 51.22(c)(25)(i)-(v), and the exemption request is of a type listed in 10 CFR 51.22(c)(25)(vi), this action meets the eligibility criteria for the categorical exclusion set forth in 10 CFR 51.22(c)(25). The NRC has found that granting exemptions that meet the provisions in 10 CFR 51.22(c)(25) is a category of actions that does not result in any significant effect, either individually or cumulatively, on the human environment.

The proposed exemption would allow NextEra to discontinue the daily visual inspection of the HSM air vents to ensure they are not blocked and instead use a daily temperature measurement program as an alternate method of monitoring HSM thermal performance. This proposed change to the method of monitoring HSM thermal performance does not involve security matters and would not impact the common defense and security of the United States.

Given the above considerations, this exemption will not endanger life or property or the common defense and security.

Otherwise in the Public Interest

In its exemption request, NextEra noted that it currently complies with TS 5.2.5.b in CoC 72-1030, Amendment No. 0, by using cameras to perform the visual surveillance of the HSM vents remotely. However, during adverse winter weather conditions, snow and ice obstruct the camera lenses and prevent viewing the HSM vents. As a result, personnel must conduct local inspections of the HSM vents and use a ladder to access the top vents for inspection, which can pose a safety hazard to the personnel conducting these inspections during adverse winter weather conditions. The licensee states that the purpose of the exemption request is to eliminate the potential for injuries that could occur to personnel when accessing the HSM vents to perform visual inspections under adverse winter weather conditions.

The exemption, by removing the requirement for the daily visual inspection of the HSM vents and thus reducing the potential for unnecessary falls or injuries to personnel conducting the inspections during adverse winter weather conditions, is consistent with NRC's mission to protect public health and safety. Therefore, the exemption is in the public interest.

4.0 CONCLUSION

Based on the foregoing considerations, the NRC has determined that, pursuant to 10 CFR 72.7, the exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the NRC hereby grants NextEra an exemption from the requirements in 10 CFR 72.212(b)(2)(i)(A), 10 CFR 72.212(b)(7), and 10 CFR 72.214 for the Seabrook Station ISFSI, subject to the following conditions:

- (1) The exemption pertains only to the visual inspection requirement in TS 5.2.5.b in CoC 72-1030, Amendment No. 0, and NextEra must implement the daily temperature measurement program, as proposed in TS 5.2.5.c in Amendment No. 1 to CoC 72-1030, as an alternate method of monitoring HSM thermal performance.

- (2) If comments arise during the rulemaking concurrence process or if the NRC receives significant adverse comments during the public comment period for the future proposed rule and direct final rule for Amendment No. 1 to CoC 72-1030, and as a result of such comments, changes to the HSM thermal monitoring program in TS 5.2.5.c are required, NextEra will then be required to address those changes in a manner deemed satisfactory to NRC staff.

The NRC has determined that this action meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(25)(vi)(C). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the granting of this exemption.

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 2nd day of December 2010.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Douglas W. Weaver, Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards