

**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 72-40, 50-269, 50-270 and 50-287; NRC-2015-0191]**

**Duke Energy Carolinas, LLC, Oconee Nuclear Station, Units 1, 2, and 3;  
Independent Spent Fuel Storage Installation**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Environmental assessment and finding of no significant impact; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption to Duke Energy Carolinas, LLC (Duke Energy or the applicant) related to the operation of Oconee Nuclear Station (Oconee) Independent Spent Fuel Storage Installation (ISFSI) (Docket No. 72-40). The request is for an exemption from the requirement to comply with Technical Specification 1.2.4a of Attachment A of Certificate of Compliance (CoC or Certificate) No. 1004, Amendment No. 9, for the Standardized NUHOMS<sup>®</sup> Horizontal Modular Storage System.

**DATES:** The environmental assessment and finding of no significant impact are available as of **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

**ADDRESSES:** Please refer to Docket ID **NRC-2015-0191** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2015-0191**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individuals listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**  
You may obtain publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced in this document (if that document is available in ADAMS) is provided the first time that a document is referenced.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** John Vera, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-5790, e-mail: [John.Vera@nrc.gov](mailto:John.Vera@nrc.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Introduction.**

The NRC is considering issuance of an exemption to Duke Energy, for operation of Oconee ISFSI, located in Seneca, South Carolina. Pursuant to § 72.7 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Specific Exemptions,” on August 28, 2014, as supplemented on December 8, 2014, and June 12, 2015 (ADAMS Accession Nos. ML14255A005, ML14346A008, and ML15169B103, respectively), Duke Energy submitted its request for exemption from the requirements of 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), and the portion of 10 CFR 72.212(b)(11) that requires compliance with the terms, conditions, and specifications of CoC No. 1004, Amendment No. 9, for the Standardized NUHOMS® Horizontal Modular Storage System. In evaluating the request, the NRC also considered exemption from the requirements of 10 CFR 72.212(a)(2) and 10 CFR 72.214 that are applicable to the request, and the NRC has weighed these regulations in its review.

Duke Energy loaded spent nuclear fuel into several 24PHB dry shielded canisters (DSCs). Subsequent to the loading, the applicant identified a discrepancy on a test report processed from the helium leak rate instrument vendor. The discrepancy was that the temperature coefficient was stated as four (4) percent per degree Celsius (%/°C), when previously this value was three (3) %/°C. The applicant stated that the instrument vendor confirmed that the three (3) %/°C coefficient was incorrect for this instrument and that canisters loaded at ambient temperatures greater than (>) 23°C would have had a non-conservative temperature coefficient applied to the helium leak rate measurement. The applicant stated that the incorrect value had been used to calculate the leak rates of forty-seven (47) dry shielded canisters DSCs.

According to the applicant, forty-two (42) of the forty-seven (47) DSCs affected were verified to meet the TS. The applicant's re-evaluation involved verifying the ambient temperature when the DSCs were loaded and applying the appropriate temperature coefficient. However, the applicant stated that the actual temperature correction value datasheets could not be found for DSCs 93, 94, 100, 105, and 106 and that these canisters were loaded in the summer months when ambient conditions during helium leak testing would likely have exceeded 23°C, so the revised temperature correction factor would have been applicable. The applicant stated that confirmation that the TS was met with the revised temperature coefficient for these DSCs, without evidence of the actual ambient temperature or test value, was not possible.

## **II. Environmental Assessment.**

### *Background*

Oconee Nuclear Station is located on Lake Keowee in Oconee County, South Carolina, 8 miles north of Seneca, South Carolina. Unit 1 began commercial operation in 1973, followed by Units 2 and 3 in 1974. Since 1997, Oconee has been storing spent fuel in an ISFSI operating under a general license as authorized by 10 CFR part 72, subpart K, "General License for Storage of Spent Fuel at Power Reactor Sites." The licensee also has a site-specific ISFSI license, which is not affected by this exemption request and associated environmental assessment (EA).

### *Identification of Proposed Action*

The CoC is the NRC-approved design for each dry cask storage system. The proposed action would grant Duke Energy an exemption from the requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.214, and the portion of 10 CFR

72.212(b)(11) that requires compliance with the terms, conditions, and specifications of CoC No. 1004, Amendment No. 9, for the Standardized NUHOMS® Horizontal Modular Storage System to the extent necessary for Duke Energy to maintain DSCs numbers 93, 94, 100, 105, and 106 in their current position at the ISFSI associated with the operation of Oconee, Units 1, 2, and 3. These regulations require storage of spent nuclear fuel under a general license in dry storage casks approved under the provisions of 10 CFR part 72 and compliance with the terms and conditions set forth in the CoC for each dry storage spent fuel cask used by an ISFSI general licensee. Specifically, the exemption would relieve Duke Energy from meeting Technical Specification 1.2.4a of Attachment A of CoC No. 1004, which limits the leak rate of the inner seal weld to  $1.0 \times 10^{-7}$  reference cubic centimeters per second (ref cc/s) at the highest DSC limiting pressure.

#### *Need for the Proposed Action*

The exemption would relieve the applicant from meeting Technical Specification (TS) 1.2.4a of Attachment A of CoC No. 1004, which limits the leak rate of the inner seal weld to  $1.0 \times 10^{-7}$  ref cc/s at the highest DSC limiting pressure, allowing for continued storage of DSCs numbers 93, 94, 100, 105, and 106 at the Oconee Nuclear Station ISFSI. According to the applicant's exemption request, confirmation that the technical specification is met is not possible. Without the exemption, the applicant would be in violation of the technical specification with no possibility of demonstrating compliance.

#### *Environmental Impacts of the Proposed Action*

The potential impact of using the TN Standardized NUHOMS® dry cask storage system was initially evaluated in the EA for the rulemaking to add the TN Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel to the list of approved spent fuel storage casks in 10 CFR 72.214.

The exemption proposed to Amendment No. 9 to CoC No. 1004 would permit Duke Energy to maintain DSCs numbers 93, 94, 100, 105, and 106 in their current position at the ISFSI associated with the operation of Oconee, Units 1, 2, and 3. The applicant addressed environmental impacts in the application, stating that for the five (5) DSCs involved, results of the initial inner seal weld dye penetrant test were found to be acceptable, and welded outer top cover plates were installed. Additionally, radiological protection group surveys of affected HSMs confirmed that there is no leakage occurring from the affected canisters. Based on its review of the licensee's application, the NRC staff concludes that the proposed action does not result in any changes to the types or amounts of any radiological effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure as a result of the proposed action. Therefore, the staff further concludes there are no significant environmental impacts associated with the proposed action, which only affects the requirements associated with the leak testing of the DSCs and does not affect plant effluents, or any other aspects of the environment.

Accordingly, the NRC staff concludes that there are no significant environmental impacts associated with the proposed action.

#### *Alternative to the Proposed Action*

Because there is no significant environmental impact associated with the proposed action, alternatives with equal or greater environmental impact were not evaluated. As an alternative to the proposed action, the NRC staff considered denial of the proposed action, which would force Duke Energy to take actions that would involve unloading the DSCs from the horizontal storage modules, transporting them to the cask handling area, opening, rewelding, and retesting the welds, and transporting the DSCs back to the HSMs. Denial of the exemption would result in an increase in radiological exposure to workers, a small potential for radioactive

releases to the environment due to radioactive material handling accidents, and increased costs to the licensee. Therefore, the NRC staff has determined that approving the proposed action has a lesser environmental impact than denying the proposed action.

#### *Agencies and Persons Consulted*

The EA associated with this exemption request was sent to the appropriate official of the South Carolina Department of Health and Environmental Control (SCDHEC) by e-mail dated January 22, 2015 (ADAMS Accession No. ML15055A604). The state response was received by e-mail dated February 23, 2015 (ADAMS Accession No. ML15055A620). The e-mail states that the SCDHEC has no comments. The NRC staff has determined that a consultation under Section 7 of the Endangered Species Act is not required, because the proposed action will not affect listed species or critical habitat. The NRC staff has also determined that the proposed action is not a type of activity that has the potential to impact historic properties, because the proposed action would occur only within the established Oconee site boundary. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act.

### **III. Finding of No Significant Impact.**

The environmental impacts of the proposed action have been reviewed in accordance with the requirements set forth in 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." Based upon the previously mentioned EA, the Commission finds that the proposed action of granting an exemption from the requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR

72.214, the portion of 10 CFR 72.212(b)(11) that states the licensee shall comply with the terms, conditions, and specifications of the CoC, in order to allow Duke Energy to maintain DSCs numbers 93, 94, 100, 105, and 106 in their current position at the ISFSI associated with the operation of Oconee, Units 1, 2, and 3, will not significantly impact the quality of the human environment. Accordingly, the Commission has determined that an environmental impact statement for the proposed exemption is not warranted and that a finding of no significant impact is appropriate.

Dated at Rockville, Maryland, this 14 day of August, 2015.

For the Nuclear Regulatory Commission.

**/RA/**

Michele Sampson, Branch Chief,  
Spent Fuel Licensing Branch,  
Division of Spent Fuel Management,  
Office of Nuclear Material Safety  
and Safeguards.