[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 72-1004, 72-40, 50-269, 50-270, and 50-287; NRC-2013-0135]

Duke Energy Carolinas, LLC, Oconee Nuclear Station Units 1, 2, and 3; Independent Spent Fuel Storage Installation; Environmental Assessment and Finding of No Significant Impact

AGENCY: Nuclear Regulatory Commission.

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

SUMMARY: The NRC is issuing an environmental assessment (EA) and a finding of no significant impact (FONSI) for an exemption request submitted by Duke Energy Carolinas, LLC, on August 13, 2012 for the Oconee Nuclear Station Independent Spent Fuel Storage Facility (ISFSI).

ADDRESSES: Please refer to Docket ID NRC-2013-0135 when contacting the NRC about the availability of information regarding this document. You may access information related to this document, which the NRC possesses and is publicly available, using any of the following methods:

- **Federal Rulemaking Web site:** Go to http://www.regulations.gov and search for Docket ID NRC-2013-0135. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may access publicly available documents online in the NRC Library 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. 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: Jennifer Davis, Senior Project Manager, Division of Spent Fuel Storage and Transportation, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone: 301-287-9173; fax number: 301-287-9341; e-mail: BJennifer.Davis@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The Nuclear Regulatory Commission (NRC) is considering issuance of an exemption to Duke Energy Carolinas, LLC (the applicant or the licensee) pursuant to § 72.7 of Title 10 of the *Code of Federal Regulations* (10 CFR) from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.214, and the portion of 10 CFR 72.212(b)(11) that requires compliance with the terms, conditions, and specifications of the Certificate of Compliance (CoC)

only with regard to the loading of the M5 clad Babcock and Wilcox (B & W) Mark B11 and Mark B11A fuel. The applicant submitted its exemption request by letter dated August 13, 2012 (ADAMS Accession No. ML12227A686)). The applicant has previously loaded spent fuel in Transnuclear, Inc. (TN) Standardized NUHOMS® System 24PHB dry storage casks (DSC) for storage in the ISFSI at Oconee Nuclear Station under CoC No. 1004, Amendment No. 9, as authorized by the General License provisions of 10 CFR part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste." The applicant now seeks an exemption to the CoC conditions that require the general licensee to meet the requirements of the technical specifications (TS) for the NUHOMS® system to permit the loading of M5 fuel into these canisters. Specifically, the applicant is requesting an exemption from TS 12.1, "Fuel Specifications," and the associated tables listed below, which specify requirements for the spent fuel assemblies to be loaded in the 24PHB DSCs under Amendment No. 9.

- Table 1-1i, "PWR Fuel Specification for Fuel to be Stored in the Standardized NUHOMS® - 24PHB DSC"
- Table 1-2n, "PWR Fuel Qualification Table for Zone 1 with 0.7 kW per Assembly, Fuel With or Without BPRAs [Burnable Poison Rod Assembly], for the NUHOMS®-24PHB DSC"
- Table 1-2o, "PWR Fuel Qualification Table for Zone 2 with 1.0 kW per Assembly, Fuel With or Without BPRAs, for the NUHOMS®-24PHB DSC"
- Table 1-2p, PWR Fuel Qualification Table for Zone 3 with 1.3 kW per Assembly, Fuel With or Without BPRAs, for the NUHOMS®-24PHB DSC"

Specifically, the applicant is requesting an exemption from the requirement that specifies that the fuel approved for use in these casks is "zircaloy clad," which includes only Zircaloy-2 or

Zircaloy-4 cladding. This requirement precludes loading B&W Mark B11 and Mark B11A fuel assemblies, which have M5 cladding, and for which the applicant requests an exemption to load at Oconee.

II. Environmental Assessment (EA)

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 EA.

Identification of Proposed Action: The CoC is the NRC approved design for each dry storage cask system. The proposed action would exempt the applicant from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.214, and the portion of 10 CFR 72.212(b)(11) that states the licensee shall comply with the terms, conditions, and specifications of the CoC with regard to permitting the loading of B&W Mark B11 and Mark B11A spent fuel assemblies for storage in the generally licensed ISFSI at Oconee. These regulations specifically require storage of spent nuclear fuel under a general license in DSCs approved under the provisions of 10 CFR part 72, and compliance with the terms and conditions set forth in the CoC for each dry spent fuel storage cask used by an ISFSI general licensee.

The TN Standardized NUHOMS® dry cask storage system CoC provides requirements, conditions and operating limits in Attachment A of the TS (ADAMS Accession No. ML062830067). The Table 1-1i of the TSs, "PWR Fuel Specification for Fuel to be Stored in

the Standardized NUHOMS®-24PHB DSC" specify that the fuel cladding shall be "zircaloy-clad fuel with no known or suspected gross cladding breaches." Zircaloy is a type of zirconium alloy which includes both Zircaloy-2 and Zircaloy-4 cladding, but does not include M5 cladding. The M5 is a different type of zirconium alloy, which does not contain any tin, as Zircaloy does, but which does contain some niobium.

This exemption only considers the loading of B&W 15x15 Mark B11 and Mark B11A spent fuel assemblies at the Oconee Nuclear Station ISFSI. Amendment No. 13 to CoC 1004, which is currently under review by the Commission, would permit storage of "zirconium alloy" clad spent fuel assemblies in the 24PHB DSC, which would include both the "zircaloy clad" assemblies permitted under previous amendments, as well as the M5 clad assemblies at issue in this exemption request. The NRC was able to draw upon review work already underway in its consideration of Amendment No. 13 for CoC 1004.

Need for the Proposed Action: The applicant has requested this exemption in order to load B&W Mark B11 and Mark B11A fuel assemblies in TN NUHOMS® 24PHB DSCs under CoC No. 1004 at the Oconee Nuclear Station. These fuel assemblies have M5 cladding (a zirconium alloy), but the current TSs allow only "zircaloy" clad assemblies.

Approval of the exemption request will allow the applicant to effectively manage its spent fuel inventory to meet decay heat zoning requirements throughout its scheduled loading campaigns. The applicant's ability to load M5 clad fuel in its next scheduled loading campaign will mean that older "zircaloy clad" fuel assemblies will be available for future loadings, so that future loadings will not be restricted by the aggregate heat generated by hotter fuel and therefore contain fewer total assemblies. The proposed action enables the applicant to load the

fewest possible DSCs by permitting cask loading of the hotter M5 fuel without later needing to "short load" casks due to heat load.

Environmental Impacts of the Proposed Action: The staff has determined that the proposed action would not endanger life or property and would not have significant impacts on the human environment. 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 (59 FR 28496, June 2, 1994 (Proposed Rule); 59 FR 65920, December 22, 1994 (Final Rule)).

The exemption proposed to Amendment No. 9 to CoC 1004 would permit the loading of M5 clad B&W Mark B11 and B11A fuel. 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, there are no significant environmental impacts associated with the proposed action. The proposed action only affects the requirements associated with the fuel assemblies to be loaded into the 24PHB DSCs and does not affect plant effluents, or any other aspects of the environment. Therefore, there are no significant impacts associated with the proposed action.

Accordingly, the Commission 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 staff considered denial of the proposed action. Denial of the proposed action would involve loading additional DSCs due to heat load restrictions, as described in the safety evaluation report. Denial of the exemption would result in an increase in radiological exposure to workers, potential additional radioactive releases to the environment, additional opportunities for accidents, and increased cost 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 Ms. Shelly Wilson of the South Carolina Department of Health and Environmental Control (SCDHEC) by e-mail dated April 10, 2013 (ADAMS Accession No. ML13107B435). The state response was received by e-mail dated April 11, 2013 (ADAMS Accession No. ML13107B441). The e-mail states that SCDHEC reviewed the draft EA and 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 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. Based upon the foregoing Environmental Assessment, the Commission finds that the proposed action of granting the exemption from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.214, and the portion of 10 CFR 72.212(b)(11) that states the licensee shall comply with the terms, conditions, and specifications of the CoC limited to the loading of the 24PHB DSCs with M5 clad B&W Mark B11 and Mark B11A fuel assemblies, will not significantly impact the quality of the human environment. Accordingly, the Commission has determined that preparation of 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 19th day of June, 2013.

For the Nuclear Regulatory Commission.

/RA/

W. Christopher Allen, Acting Chief,
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Division of Spent Fuel Storage and Transportation,
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