



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

July 18, 2013

Mr. Scott Batson  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, REQUEST FOR  
ADDITIONAL INFORMATION REGARDING AMENDMENT APPLICATION FOR  
USE OF A REVERSE OSMOSIS PURIFICATION SYSTEM (TAC NOS. ME9877,  
ME9878, AND ME9879)

Dear Mr. Batson:

On October 30, 2012, as supplemented on January 21, 2013, and June 11, 2013, Duke Energy Carolinas, LLC (Duke), submitted an application for a proposed amendment for the Oconee Nuclear Station, Units 1, 2, and 3, which would allow the use of a reverse osmosis system to purify the borated water storage tanks and the spent fuel pools during power operation.

The Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). On July 18, 2013, the Duke staff indicated that a response to the RAI would be provided within 45 days of the date of this letter.

If you have any questions, please call me at 301-415-2901.

Sincerely,

A handwritten signature in cursive script that reads "John P. Boska".

John P. Boska, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
REGARDING USE OF A REVERSE OSMOSIS SYSTEM  
DUKE ENERGY CAROLINAS, LLC  
OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3  
DOCKET NOS. 50-269, 50-270 AND 50-287

Duke Energy Carolinas, LLC (Duke or the licensee) originally submitted a license amendment request (LAR) dated November 15, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103220101) requesting approval to operate a reverse osmosis (RO) purification system at Oconee Nuclear Station (ONS), Units 1, 2, and 3, to purify the borated water storage tanks and the spent fuel pools during power operation. Duke then submitted responses to the Nuclear Regulatory Commission's (NRC's) request for additional information (RAI) on the following dates: February 18, 2011 (ADAMS Accession No. ML110550616), May 12, 2011 (ADAMS Accession No. ML11137A112), August 2, 2011 (ADAMS Accession No. ML11215A198), October 10, 2011 (ADAMS Accession No. ML11285A302), and December 15, 2011 (ADAMS Accession No. ML11354A253). Based on discussions between Duke and the NRC, by letter dated April 3, 2012, Duke requested to withdraw this LAR, and the NRC staff agreed by letter dated April 12, 2012. In a letter dated October 30, 2012 (ADAMS Accession No. ML12307A219), as supplemented on January 21, 2013 (ADAMS Accession No. ML13025A254), and June 11, 2013 (ADAMS Accession No. ML13172A043), Duke submitted a revised LAR for the use of the RO system. The Nuclear Regulatory Commission (NRC) staff is reviewing the submittals and has the following questions.

RAI-16 (Follow-up to previous RAI 7):

In lieu of automatically actuated isolation valves, the LAR proposes to use a time critical operator action (TCOA) to ensure the RO system supply piping boundary valves are manually closed before initiation of recirculation to prevent post loss-of-coolant accident (LOCA) fluids from entering the RO system.

Regulatory Guide 1.183, Regulatory Position 5.1.2 states that:

Credit may be taken for accident mitigation features that are classified as safety-related, are required to be operable by technical specifications, are powered by emergency power sources, and are either automatically actuated or, in limited cases, have actuation requirements explicitly addressed in emergency operating procedures. The single active component failure that results in the most limiting radiological consequences should be assumed.

The licensee has not provided adequate justification for why these boundary valves do not need to be automatically actuated. The proposed boundary valves are manually operated and both located in the same room. A dedicated operator will not be used to ensure the valves are closed when directed by the emergency operating procedures and no remote indication has been

Enclosure

provided in order to verify the valves are closed. During the recirculation phase, these valves isolate the reactor coolant system from the environment similar to containment isolation valves, which must be locked closed or automatically isolated (General Design Criteria 56/57). As discussed in Generic Letter (GL) 91-08, normally closed isolation valves may be opened for limited time periods under administrative controls, which includes stationing of a dedicated operator. As discussed in Information Notice 97-78, if a dedicated operator is not provided, an evaluation of the impact of a single operator error should be performed, including the ability to recover from credible operator errors and the time required to make the recovery. Therefore, provide one of the following:

1. An analysis of the impact of not isolating the RO system on the radiological consequences of a design basis accident.
2. Automatically actuated RO system boundary valves.
3. A dedicated operator responsible for closing the RO system boundary valves, with the controls for maintaining operability of the RO system valves using the dedicated operator discussed in the TS Bases.
4. An evaluation of the impact of a single operator error on the ability to perform the TCOA within 33 minutes, including failure of the operator to be dispatched to perform the action, the ability of the operator to get to the valves using more than one pathway, and the impact of having no verification that the action has been performed.

RAI-17 (follow-up to previous RAI 9)

Explain why the spent fuel (SF) cooling and purification system will not become contaminated with post-LOCA back leakage, since the SF cooling and purification system connects to the borated water storage tank (BWST) with the valves open to carry the RO discharge flow back to the BWST, and the BWST itself is subject to post-LOCA back leakage.

July 18, 2013

Mr. Scott Batson  
Site Vice President  
Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

**SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, REQUEST FOR ADDITIONAL INFORMATION REGARDING AMENDMENT APPLICATION FOR USE OF A REVERSE OSMOSIS PURIFICATION SYSTEM (TAC NOS. ME9877, ME9878, AND ME9879)**

Dear Mr. Batson:

On October 30, 2012, as supplemented on January 21, 2013, and June 11, 2013, Duke Energy Carolinas, LLC (Duke), submitted an application for a proposed amendment for the Oconee Nuclear Station, Units 1, 2, and 3, which would allow the use of a reverse osmosis system to purify the borated water storage tanks and the spent fuel pools during power operation.

The Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). On July 18, 2013, the Duke staff indicated that a response to the RAI would be provided within 45 days of the date of this letter.

If you have any questions, please call me at 301-415-2901.

Sincerely,  
*/RA/*

John P. Boska, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

**DISTRIBUTION:**

PUBLIC	RidsAcrcAcnw_MailCtr Resource	RidsNrrDorIDpr Resource
LPLII-1 R/F	RidsNrrLASFiguroa Resource	RidsNrrDorILp2-1 Resource
RidsNrrPMOconee	RidsRgn2MailCenter Resource	RidsNrrDraAhpB
RidsNrrDraAadb	RidsNrrDeEmcb	RidsNrrDssStsb

**ADAMS Accession No.: ML13198A048** **\*See email**

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/AHPB/BC*
NAME	JBoska	SFiguroa	UShoop
DATE	7/18/13	7/18/2013	7/11/13
OFFICE	NRR/AADB/BC*	NRR/LPL2-1/BC	NRR/LPL2-1/PM
NAME	TTate	RPascarelli	JBoska
DATE	6/27/13	7/18/13	7/18/13

**OFFICIAL RECORD COPY**