September 20, 2012

Mr. Preston Gillespie
Site Vice President
Oconee Nuclear Station
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 – MODIFICATIONS TO ADDRESS EXTERNAL FLOODING HAZARDS (TAC NOS. ME7970, ME7971, AND ME7972)

Dear Mr. Gillespie:

By letter dated June 22, 2010, the U.S. Nuclear Regulatory Commission (NRC) issued a confirmatory action letter (CAL) to Duke Energy Carolinas, LLC (Duke, the licensee), associated with the mitigation of external flooding hazards at the Oconee Nuclear Station, Units 1, 2, and 3 (ONS) site, resulting from a postulated failure of the Jocassee Dam. By letters dated June 24, August 2, and November 29, 2010, you provided initial responses to the CAL. Following additional meetings and correspondence, the NRC transmitted a request for additional information (RAI) dated May 15, 2012, on your responses to the CAL. These RAIs requested you to provide (1) the codes and standards to be used in the design of new flood walls proposed to protect ONS and (2) the seismic design criteria contained in these codes and standards.

By letter dated June 14, 2012, you provided the requested information to the NRC. The NRC staff has reviewed your RAI responses in Attachment 1 to your June 14, 2012, submittal, including the supporting information in Attachment 2 to the submittal. The RAI responses included information regarding the codes and standards which you propose to use in the design and construction of the structures related to the ONS external flood mitigation strategy, as applicable. The RAI responses include a detailed description of the seismic design criteria specified by the identified codes and standards. Your RAI responses note that the design and construction of these structures and supports will be performed in accordance with codes and standards accepted by the Federal Energy Regulatory Commission (FERC), which includes standards from the U.S. Army Corps of Engineers (ACE) and the U.S. Bureau of Reclamation, among others. The NRC staff notes that the Jocassee and Keowee Dams, which are key components in the analysis of flooding hazards at the ONS site, are licensed and regulated by FERC.

The NRC staff has previously recognized the jurisdictional boundaries of FERC and ACE in the area of dam safety. Notably, the NRC staff's resolution of License Renewal Issue No. 98-0100, "Crediting FERC-Required Inspection and Maintenance Programs for Dam Aging Management," concluded that the use of FERC and ACE programs for aging management of dams under the jurisdiction of these bodies provided an acceptable means to satisfy the requirements of the license renewal rule. NRC Regulatory Guide (RG) 1.127, "Inspection of Water-Control Structures

Associated with Nuclear Power Plants," which references a number of ACE standards for inspections and associated evaluations of water-control structures, arrives at a similar conclusion. The NRC staff's position is that the expertise in water control structure safety, including construction, maintenance, inspection and regulation, lies with FERC and ACE. The NRC staff also references the use of a number of ACE Engineering Manuals (EM) in the design and construction of water-control structures at uranium recovery facilities and fuel cycle facilities in NRC RG 3.11, "Design, Construction, and Inspection of Embankment Retention Systems at Uranium Recovery Facilities," and RG 3.13, "Design, Construction, and Inspection of Embankment Retention Systems at Fuel Cycle Facilities."

As such, the NRC staff finds it acceptable that the structures you proposed to mitigate external floods will be designed and constructed in accordance with FERC-accepted codes and standards. The NRC staff also notes that a review of the codes and standards related to the structural design of the aforementioned structures indicates that these codes and standards provide an adequate means to ensure that these structures are designed to withstand seismic loads consistent with FERC requirements. The NRC staff acknowledges that the peak ground accelerations evaluated using the FERC-accepted standards may not be the same as those used in evaluating seismic Class 1 structures at Oconee using the maximum hypothetical earthquake peak ground accelerations as identified in the Oconee licensing basis. However, the structures you proposed are to protect the ONS site against a 'sunny day' failure of the Jocassee Dam. Therefore, the NRC staff finds that the use of FERC-accepted codes and standards are appropriate for protection against flooding from this mode of Jocassee Dam failure.

In your June 14, 2012 letter, you identified the need to ensure actions you have taken and actions you plan to take in response to external flooding hazards are consistent with the NRC's request for information (RFI) related to flooding that stemmed from the Fukushima event. The NRC issued this RFI on March 12, 2012, under Title 10 of the *Federal Code of Regulations* (10 CFR), Section 50.54(f). You asked if the NRC's January 28, 2011, Safety Evaluation (SE) on the Oconee inundation study satisfies the requirements in the RFI for Recommendation 2.1: Flooding, as the Hazard Reevaluation Report for the site. If your review of Recommendation 2.1 using the standards of the RFI indicate that the Jocassee Dam will not fail due to overtopping or seismic failure, and the NRC staff review supports this determination, then the NRC will accept the January 28, 2011, SE as defining the bounding flood at the Oconee site due to dam failure.

The NRC intends to maintain the CAL dated June 22, 2010, active until it can be superseded by regulatory action related to the Fukushima responses. The NRC staff notes that our acceptance in this letter of the FERC standards initiates the timeline to have your flood modifications installed in 30 months plus the regulatory review period, which was committed to in your letter dated October 17, 2011. However, the NRC staff realizes you are engaged in the additional task of submitting the flooding hazard evaluation report required by the RFI letter by March 12, 2013. Accordingly, the NRC staff will accept initiation of the timeline when you submit the flooding hazard evaluation report, provided you submit the new design to the NRC at the same time you submit it to FERC. Such a schedule would shorten that timeframe by three months, leading to completion of the plant modifications by approximately June 2016, assuming a 12 month regulatory review period. You should advise us if you prefer to initiate the timeline now or following the submission of the flooding hazard evaluation report. Be advised that the NRC staff is committed to having licensees implement the plant modifications brought about by the Fukushima initiatives by 2016, except for extraordinary circumstances. Considering the ongoing

interactions the NRC staff has had with Duke on this subject, it is unlikely that the NRC staff will consider any further extensions for Oconee.

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

Sincerely,

/RA by Stephanie M. Coffin for/

Michele G. Evans, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

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