

January 29, 2010

Mr. Dave Baxter
Vice President, Oconee Site
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: EVALUATION OF DUKE ENERGY CAROLINAS, LLC (DUKE), NOVEMBER 30, 2009, RESPONSE TO NUCLEAR REGULATORY COMMISSION (NRC) LETTER DATED APRIL 30, 2009, RELATED TO EXTERNAL FLOODING AT OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (OCONEE) (TAC NOS. ME3065, ME3066, AND ME3067)

Dear Mr. Baxter:

On August 15, 2008, the Nuclear Regulatory Commission (NRC) issued a request for information pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.54(f), regarding the protection against external flooding at Oconee, including the potential failure of the Jocassee Dam. Duke responded to the NRC letter on September 26, 2008. The NRC staff reviewed the letter and found that Duke had not provided sufficient information to demonstrate that Oconee will be adequately protected from external flooding events. Subsequently, on April 30, 2009, the NRC issued a letter to Duke requesting additional information (RAI) to demonstrate that Oconee will be adequately protected from external flooding events. In the April 30, 2009, letter, the NRC requested that Duke provide analyses which would establish an adequate licensing basis for external flooding at Oconee by November 2009, including a schedule for any site modifications necessary to mitigate an external flooding event.

Several closed meetings and telephone conference calls have taken place in order for the NRC staff to obtain a better understanding of the technical issues. By letter dated November 30, 2009, Duke provided a response to the NRC April 30, 2009, letter. Based on a preliminary review of the November 30, 2009, letter, the NRC staff determined that although Duke provided a more accurate estimate of the flooding caused by a failure of the Jocassee Dam, the NRC staff finds that additional information is needed. This information is necessary for the NRC staff to determine if the analyses performed to date will demonstrate, for the entire Jocassee earthen works, that the Oconee site will be adequately protected from external flooding events. Enclosed is a set of RAIs. These RAIs have been discussed with members of your staff on December 10, 2009, and January 21, 2010. The NRC requests that Duke provide a response to the RAIs within 30 days of receipt of this letter. If Duke cannot provide the information requested within 30 days, please notify the NRC in writing within 5 days of receipt of this letter.

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D. Baxter

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By letter dated January 15, 2010, Duke submitted a letter to the NRC which provided its interim compensatory measures (ICMs) to ensure that the Oconee site will be adequately protected from external flooding events until the final mitigating strategies have been implemented and all site modifications have been completed. The NRC staff will perform a further review of the ICMs, and will perform a future inspection. In the interim, the NRC staff requests that Duke implement the ICMs and keep them in place until such time that this safety issue is resolved.

The NRC stated in its April 30, 2009, letter, that there was not an immediate need to modify, suspend or revoke the Oconee licenses. The NRC staff continues to believe that there is no immediate need to take such actions, as long as the ICMs are effectively maintained at the Oconee site and Duke can provide adequate information responsive to the NRC's request in a timely manner. Should Duke not be able to maintain the ICMs or provide adequate information in a timely manner, the NRC will consider taking further regulatory action.

In responding to the enclosed RAIs, please take the appropriate measures in the development and handling of information regarding this issue, including consideration of the provisions of 10 CFR 2.390(d)(1). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

If you have any questions on this matter, please contact John Stang of my staff at 301-415-1345.

Sincerely,

/RA/

Joseph G. Giitter, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Enclosure:
RAIs

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

Enclosure:
RAIs

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***by phone**

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	OE	OGC	DE/AD
NAME	JStang	MOBrien	RZimmerman	CScott NLO	DSkeen
DATE	01/27/10	01/27/10	01/29/10	01/28/10	1/29/10
OFFICE	NRR/ADES	RII/DRP/D*	NRR/LPL2-2/BC	NRR/DORL/DD	NRR/DORL/D
NAME	JGrobe	LWert	GKulesa	AHowe	JGiitter
DATE	01/28/10	01/28/10	01/29/10	01/28/10	01/29/10

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (OCONEE)

RELATED TO EXTERNAL FLOODING AT OCONEE

Based on an assessment of Duke's November 30, 2009, letter, the Nuclear Regulatory Commission (NRC) staff has identified that additional information is needed in order to have reasonable assurance that the parameters and sensitivity analyses adequately identify the amount of water that could result at the site due to a potential external flooding event. The NRC staff believes that the issues identified below could potentially impact the flood level at the Oconee site.

1. Justify the assumptions used for parameters (breach dimension, breach time, and breach location) associated with the Jocassee Dam, Keowee Main Dam, Keowee West Saddle Dam, Intake Dike, and the Little River Dam. Also include the assumptions associated with the operation and capacity of the turbines and discharge gates for the Jocassee Dam. Specifically, describe how the values selected for each parameter represent a conservative value.
2. Justify the use of the different Manning "n" values for the following areas: Little River Basin below the channel, the Keowee River below the Jocassee tailrace, and in the Keowee tailrace extension to the road bridge. Specifically, describe how the "n" values selected represent a conservative value.
3. Justify the armoring of the intake canal in your model. Specifically, describe what effects the armoring of the intake canal has in directing the flow of water during a potential breach and in the location of the breach. Also identify areas of the plant where water is likely to be higher without the armoring, as well as with the armoring of the intake canal. Describe how these assumptions represent a conservative value.
4. The 2-dimensional (2D) model shows a second surge of water at the Oconee site due to a backup of water from the Keowee tailrace. Describe the effect of the overall water level at the Oconee site, following a faster breach time of the Keowee Dam.
5. Organize the final runs such that the set of parameters that provides the highest water level for each point of interest (flood barrier, standby shutdown facility, any other necessary points of personnel ingress, etc.) can be identified and evaluated, with reasonable conservatism.
6. Provide the key for your runs associated with the sensitivity analysis for the Hydrologic Engineering Center - River Analysis System (HEC-RAS) model.
7. Provide a copy of the final HEC-RAS models and 2D models that were used for the runs to justify the proposed modifications that will be made to protect the Oconee site from external flooding.
8. Provide a copy of the topology associated with the area below Keowee Dam and around the Oconee site, yard, and switchyard.

Enclosure