

August 20, 2010

Mr. John Elnitsky
Vice President, Nuclear Plant Development
Progress Energy Carolinas, Inc.
P.O. Box 14042
Saint Petersburg, FL 33733

SUBJECT: SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION
CONCERNING HYDROLOGY CALCULATIONS IN SUPPORT OF A TRITIUM
ANALYSIS FOR THE SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2
AND 3, COMBINED LICENSE APPLICATION

Dear Mr. Elnitsky:

This letter transmits to Progress Energy Carolinas, Inc. (PEC), a supplemental request for additional information (RAI) needed to support the U.S. Nuclear Regulatory Commission (NRC) staff's evaluation of the prior RAI response dated December 3, 2009 (Agencywide Documents Access and Management System [ADAMS] Accession Number ML093421268). In this response to RAI 5.4.2-2, PEC provided the NRC staff an estimate of the potential tritium buildup concentration in the Harris Reservoir due to combined liquid effluent discharges from Shearon Harris Units 1, 2, and 3. The estimate relied upon the CE-QUAL-W2 hydrodynamic water quality model that was originally set up and calibrated to evaluate the potential changes in water quality resulting from a potential wastewater discharge to Harris Reservoir. The NRC staff needs to review the application of CE-QUAL-W2 to the evaluation of tritium concentrations and as such is requesting PEC provide the model and associated native input and output files.

The NRC staff proposes to hold a public meeting as soon as practicable after the date of this letter to discuss with PEC staff and contractors the NRC staff's review of the hydrodynamic water quality analysis. The NRC staff may also host a second public meeting approximately two weeks after the response to the supplemental RAI has been received to resolve any remaining NRC staff technical questions or need for clarification.

As with the previous RAIs, the NRC assumes that technically correct and complete responses will be received within 30 days of receipt of the supplemental RAI. For any information that cannot be provided in 30 days, it is expected a date for receipt of this information will be provided to the NRC within the 30 day period so the NRC staff can assess the allocation of resources.

J. Elnitsky

- 2 -

Should you have any questions or need additional clarification, I can be reached at 301-415-3803, or via e-mail to Donald.Palmrose@nrc.gov.

Sincerely,

/RA/

Donald Palmrose, PhD
Senior Project Manager
Environmental Projects Branch 3
Division of Site and Environmental Reviews
Office of New Reactors

Docket Nos.: 52-022 and 52-023

Enclosure:
As stated

cc: See next page

J. Elnitsky

-3-

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NRO-002

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UNITED STATES NUCLEAR REGULATORY COMMISSION

PROGRESS ENERGY CAROLINAS, INC.

COMBINED LICENSE APPLICATION, ENVIRONMENTAL REVIEW OF OPEN ISSUES FOR

THE SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3

DOCKET NOS. 52-022 AND 52-023

Table 1. Supplemental Requests for Additional Information on the Hydrodynamic Water Quality Model Applied to the Modeling of Long-Term Tritium Levels in Harris Reservoir

RAI Number 5.2.2-4 ESRP 5.2.2 10 CFR 51.71(d)	Provide the native spreadsheet file used to calculate the monthly water balance for Harris Reservoir and the elevation area storage capacity curves used in the water level calculation (ranging from 215 ft to 260 ft).	The calculation package HAG-XK01-GER-004, Rev0 "Lake Level Variation due to Variable Makeup Pumping Rates from Cape Fear River," presents calculations from a spreadsheet of the monthly water balance for Harris Reservoir. The lake level analysis is important in determining the feasibility of maintaining the level of Harris Reservoir. The lake level is determined by several factors including the elevation-storage relation for Harris Reservoir as well as the conditions under which makeup water are available from the Cape Fear River.
RAI Number 5.2.2-5 ESRP 5.2.2 10 CFR 51.71(d)	Provide the native files for the model CE-QUAL-W2 for the water quality analysis of Harris Reservoir, as referenced in the calculation package HAR-338884-TMEM-122 and table of input parameters and their values which were used for conducting water quality analysis using the model CE-QUAL-W2.	The report titled "Development and Calibration of a CE QUAL W2 Model for Harris Lake including 2008 update," is referenced in the calculation package HAR-338884-TMEM-122 titled "Modeling of Long Term Tritium Level in Harris Lake," submitted by Progress Energy. The native files for the water quality model were not provided with the calculation package. Input parameters that govern the transport and fate of water quality constituents were not provided with the calculation package.

RAI Number 5.4-1 ESRP 5.4 10 CFR 51.71(d)	Provide the native files for the model CE-QUAL-W2 for the tritium analysis of Harris Reservoir as discussed in the calculation package HAR-338884-TMEM-122, a table of input parameters and their values which were used for conducting the tritium analysis using the model CE-QUAL-W2, and the model segment and layer numbers from which the results were extracted.	The calculation package HAR-338884-TMEM-122 titled “Modeling of Long Term Tritium Level in Harris Lake,” was submitted by Progress Energy. The native files for the tritium model were not provided with the calculation package. Input parameters that govern the transport and fate of tritium were not provided with the calculation package.
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