

October 30, 2009

Mr. James Scarola
Senior Vice President and
Chief Nuclear Officer
Progress Energy, Inc.
P.O. Box 1551
Raleigh, NC 27602

SUBJECT: SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION REGARDING
THE ENVIRONMENTAL REVIEW OF THE COMBINED LICENSES
APPLICATION FOR THE SHEARON HARRIS NUCLEAR POWER PLANT,
UNITS 2 AND 3

Dear Mr. Scarola:

By letter dated June 26, 2009 (ML091890423), Progress Energy Carolinas, Inc. (PEC) sent to the U.S. Nuclear Regulatory Commission (NRC) Revision 1 of the Environmental Report (ER) for the Shearon Harris Nuclear Power Plant project. As provided in the ER, tritium releases to Harris Reservoir are discussed in Section 5.4 as follows:

Tritium – In support of the management of tritium releases to Harris Reservoir, HNP not only tracks the activity of liquid tritium released, but also tracks and trends the tritium levels in the reservoir in accordance with their Radiological Environmental Monitoring Program. The average annual tritium release to Harris Reservoir from HNP operations is 465 Curies/year (Ci/yr). Tritium releases from the HAR units are conservatively estimated to be 1010 Ci/yr per unit. The average annual tritium release to Harris Reservoir is the sum of the tritium releases from HNP and HAR or 2485 Ci/yr. Harris Lake is the primary source drinking water for employees working at the HNP and will be the primary source of drinking water for the HAR. As such, tritium concentrations within the reservoir should be maintained below the USEPA drinking water standard of 20,000 pCi/l. Operations at HAR will require additional makeup water from Harris Reservoir. The normal water level of the Main Reservoir will be raised from 67.1 m to 73.2 m (220 ft. to 240 ft.) NGVD29 to accommodate HAR operations. The HAR Reservoir Makeup Water System will minimize tritium buildup in the Harris Reservoir by (1) adding and maintaining additional volume of water required for HAR operations and (2) by providing a **minimum** flow rate through the reservoir ~~on an average annual basis~~. PEC will monitor water quality in the reservoir to ensure tritium concentrations are maintained below the USEPA drinking water standard. [The bolded and strikethrough text are the changes between Revision 0 and Revision 1 of the ER.]

After review of the above text in the ER, the NRC staff has determined that the following request for additional information (RAI) is necessary:

Supplemental RAI 5.4.2-2

Provide an evaluation of the potential tritium buildup concentration (in pCi/l) in the Harris Reservoir from the addition of liquid effluents containing tritium from the operation of Units 2 and 3.

Additionally, based on the potential tritium buildup concentration in the Harris Reservoir, provide an estimate of dose and impacts to the public due to tritium released by the evaporation of water obtained from the Harris Reservoir from the cooling towers for the proposed Units 2 and 3.

Basis for the RAI

In order to evaluate dose impacts with respect to Appendix I to 10 CFR Part 50, the staff requires these additional evaluations. Applicant must demonstrate that tritium buildup in lake water and release through cooling tower evaporation will not result in an adverse impact to members of the public with regards to the dose from effluent releases.

The NRC assumes that technically correct and complete responses will be received within 30 days of receipt of the supplemental RAIs. For any RAI information that cannot be answered 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 impacts to resources.

Should you have any questions, I can be reached at 301-415-3803 or via email at Donald.Palmrose@nrc.gov. In my absence, please contact Ms. Michelle Moser at 301-415-6509 or via email at Michelle.Moser@nrc.gov.

Sincerely,

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

Docket Nos. 52-022 and 52-023

Supplemental RAI 5.4.2-2

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Sincerely,

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DISTRIBUTION: See next page

ADAMS Accession No.: **ML092810505**

OFFICE	PS:RAP3: DSER:NRO	LA:RAP3: DSER:NRO	OGC	BC:RAP3: DSER:NRO
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DATE	10/_08_/09	10/13/09	10/_21_/09	10/_30_/09

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J. Scarola

Letter to James Scarola from Donald Palmrose dated October 30, 2009

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LICENSES APPLICATION FOR THE SHEARON HARRIS NUCLEAR
POWER PLANT, UNITS 2 AND 3

DISTRIBUTION:

Docket Nos. 52-022 and 52-023

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