

Anad K. Singh  
Vice President  
Phone: (312) 269-7517  
FAX: (312) 269-7313  
Email: anad.k.singh@sargentlundy.com

June 26, 2006  
S&L Letter No. SLPEC-2006-005  
Project No. 11940-013

Progress Energy Carolinas Inc.  
COL Applications for Two AP1000 Units at Harris Site

Mr. Garry Miller  
Manager, License Renewal and New Plant Licensing  
Nuclear Engineering & Services  
Progress Energy Carolinas, Inc.  
P.O. Box 1981  
TPP 15  
Raleigh, North Carolina 27602-1981

Subject: Recommendation for the Conceptual Design of the Harris Lake Makeup Water Intake

Dear Mr. Miller:

On Tuesday, June 6, 2006, an engineering walkdown and initial environmental assessment of alternative water intake sites for makeup water to the Harris Lake from the Cape Fear River was conducted by staff from Progress Energy (PE), Sargent & Lundy<sup>LLC</sup> (S&L) and CH2M Hill.

Reference the S&L walkdown report dated June 7, 2006 and the CH2M Hill report titled "Environmental Fatal Flaw Analysis for Cape Fear Water Intake Structure and Pipeline" dated June 20, 2006.

The walkdown report summary was discussed at the June 8, 2006 and June 22, 2006 Project Weekly Telecon. This letter is to summarize our recommendation and to obtain your approval for the recommended location of the pumphouse, pipe routing, and discharge structure.

#### Water Intake Site Location

Besides the original makeup pipeline corridor from the Buckhorn Dam along roadways and cross country to the Harris Dam, three (3) alternatives were assessed for the location of the makeup water pumphouse on the Cape Fear River:

1. Within the cove adjacent to the Buckhorn Dam
2. The point where the CP&L transmission line crosses the Cape Fear River
3. On the Cape Fear River at the Boat Launch Park and Dixie Gas Pipeline

Alternate 1 was the location of the original lake makeup pumphouse design and has a major advantage of access by existing roads and no land ownership issues.

The disadvantage of this location is that the cove is shallow and will require dredging to get the appropriate depth to ensure an adequate water supply at low river flow conditions.

Alternate 2 has the advantage of being on the CP&L transmission line corridor, but is a wetland site with no direct access to the site from area roadways. A new access road way would have to be constructed along the CP&L transmission line corridor, or from existing area roadways that may require crossing multiple waterways, as well as, a large, forested wetland system.

Alternate 3 is adjacent to the public boat launch where the Cape Fear River and Dixie Gas Pipeline intersect. The advantage of this site is access from existing roads. Since the pumphouse would have to be located in the wooded area adjacent to the boat launch, many disadvantages of this site exist: including, land ownership/use issues, intake piping into the river that could become a hazard or obstruction for boats, the potential for site vandalism, and safety concerns during construction.

#### Makeup Water Pipeline Routing

The original design for the makeup water pipeline routing was from the cove at Cape Fear along existing roads and across country to the location adjacent to the Harris Lake spillway. This design minimized the length of piping required but did nothing to help lower tritium in the Harris Lake.

Two (2) alternate routings were considered that will resolve the lake mixing/tritium dilution issue:

1. Along the CP&L transmission line corridor right-of-way.
2. Along the Dixie (Gas) Pipeline corridor right-of-way.

The CP&L transmission line corridor has the advantages of sufficient area for staging and construction of the makeup water pipeline and relatively easy access from existing country and public roadways. The Dixie Pipeline corridor is not presently wide enough to allow staging and construction of the makeup water pipeline corridor. Issues related to land ownership and/or agreements to allow use of the corridor, access/permission to cross public roadways, and the concern that the water line would be in close proximity to a gas pipeline will be concerns for the Dixie Pipeline right-of-way.

#### Makeup Water Pipeline Discharge into Harris Lake

A location where the CP&L transmission line corridor crosses the fourth estuary or "finger" on the west side of the Harris Lake was chosen for the new makeup water pipeline discharge. This location resolves the mixing issue for the water in Harris Lake, providing a location for the discharge of the makeup water that is well upstream of the existing (and probable new) cooling tower blowdown pipe discharge. This location is accessible from existing county or public roads and provides sufficient slope for the discharge structure spillway.

Mr. Garry Miller  
Progress Energy Carolinas, Inc.

June 26, 2006  
S&L Letter No. SLPEC-2006-005  
Project No. 11940-013  
Page 3 of 3

Recommendation

Our recommendation is to proceed with the conceptual design of the Harris Lake makeup water pumphouse at the location of the cove at Buckhorn Dam (Alternate 1), and use the CP&L transmission line corridor to route the makeup piping to the discharge location at the fourth estuary. The enclosed sketch provides a sketch of the recommended pumphouse location, pipeline routing, and discharge location.

Please let me know, if you agree with the recommendations. We plan to initiate the conceptual design of the Cape Fear makeup water system after we have your approval.

Please contact me if you have any questions related to this issue.

Very truly yours,



A. K. Singh  
Project Manager

AKS:RAH:clm  
Enclosure  
Copies:  
R. Kitchen  
R. Knott  
P. Snead  
J. Ioannidi  
L. Young  
D. K. Schopfer  
C. M. Launi  
R. A. Hameetman

