

**Additional Information Summarizing the Shearon Harris Nuclear Plant \NRC  
Environmental Staff Site Visit  
Location: Shearon Harris Nuclear Plant Site, New Hill, NC  
May 7-8, 2007**

As a result of the visit, the NRC staff has identified the following issues or concerns:

1. Cooling water: Progress Energy has avoided a number of potential issues that might have arisen had they permitted the construction of private residences on the shore of Harris Lake. The station cooling lake is a popular recreational area particularly for fishing. However, availability of sufficient water for the cooling of the existing unit and two additional AP1000 nuclear units and potential impacts associated with postulated changes to Harris Lake were identified as significant issues during the staff's site readiness assessment visit. The potential issues related to Harris Lake identified during the visit were the cooling lake water budget during droughts, the impacts of raising the lake level on wetlands and public facilities, the impacts of withdrawing water from the Cape Fear River to maintain the level of Harris Lake, the impact of three unit operations on Buckhorn Creek downstream of the Lake Harris dam, and the buildup of tritium in Harris Lake during drought and low-flow conditions.

A comprehensive analysis of the water budget for the Cape-Fear River-Harris Lake-Buckhorn Creek system for three-unit operation is necessary before a complete understanding of the potential impacts to the hydrological and ecological environment can be assessed. The water budget should include operation in normal conditions and during drought events. The frequency and duration of low-flow periods need to be addressed. The cumulative impacts of planned water use at the Harris site on downstream users need to be discussed. The results of these analyses should be evaluated and incorporated into the water use and quality, terrestrial and aquatic ecology, socioeconomic and environmental justice, and radiological health reviews presented in the ER.

2. Ecological Issues: The impact of continuous water withdrawal from the Cape Fear River, particularly under drought conditions, on aquatic biota needs to be more completely assessed. Specifically, the potential effects of impingement and entrainment of biota in the river and downstream impacts to biota due to reduced flow in the river should be discussed. Also, the significant alteration of the shoreline and fringing wetlands of Lake Harris due to the raising of the lake level by 20 feet needs to be fully assessed.

3. Transmission lines: Progress has not determined whether new transmission line corridors will be needed or where these lines would tie into the grid for the proposed two new units at the Harris site. There appears a likelihood that any new lines for Unit 2 could go in the same corridors as the lines for the existing unit. There is more uncertainty related to transmission lines for Unit 3. The COL application should address the potential land use and ecological impacts due to the construction, operation, and maintenance of the transmission system that connects the proposed two new units to the grid.

4. Public contact: Progress Energy has collected a significant amount of information related to possible impacts of the potential new units. However, it has not fully

developed many of the contacts with public agencies that would be affected by the construction and operation of the new units. For example, at the time of the readiness assessment visit, the North Carolina Department of Transportation and Wake County Department of Parks, Recreation and Open Space did not appear to be aware of the potential impact of raising the lake level on their facilities or to have contributed to identification of potential issues and mitigation measures. Similarly, discussions with permitting agencies appear to have not been initiated or are in a very preliminary stage.

Based on its review of information during the May 7–8 visit, the staff believes that the main areas of difficulty the applicant is currently facing are (1) issues related to the adequacy and availability of cooling water and the resulting impacts to the aquatic environment as a result of operation of the proposed two new units, (2) the effects of raising the water level in Lake Harris by 20 feet, (3) the impacts of the undefined transmission line system that would connect the proposed two new units to the grid, and (4) the lack of, or the insufficient coordination and/or notification of, local and State organizations or agencies.

The current schedule for submittal of the application is early calendar year 2008. Based on the staff's readiness assessment at this stage, the staff believes that the applicant is on target to meet the schedule that it provided to the NRC in response to RIS 2007-08 provided that the evaluation of the water budget for the cooling system demonstrates that the water supply is adequate and all supporting studies are completed prior to submission of the application.