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Subject: Draft Environmental Impact Statement for an Early Site Permit at the Vogtle Electric Generating Plant Site ER 07-752

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November 28, 2007

Chief, Rules, Directives and Editing Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

Re: Draft Environmental Impact Statement for an Early Site Permit at the Vogtle Electric Generating Plant Site

The Department of the Interior has reviewed the referenced draft environmental impact statement (DEIS) and offers the following comments.

Section 2.6.2.2, Groundwater Use, page 2-35, lines 32-40 and page 2-37, lines 1-6

Ground-water flow in this area is complex and 3-dimensional. A new Geological Survey (USGS) study (Cherry and Clarke, 2007) has refined the characterization of ground-water flow in the study area. An earlier study (Clarke and West, 1998) concluded that some water from the Savannah River Site can cross beneath the Savannah River and discharge into the floodplain on the Georgia side. Cherry and Clarke (2007) did a particle-tracking analysis of the Plant Vogtle wells. This study simulated the source of water to those wells under 2002 and potential future pumping conditions. Results of that evaluation concluded that the source of water to those wells under current and most future pumping scenarios was derived in Georgia; with the exception of one scenario that showed a small portion of the water was from South Carolina. None of the scenarios showed any water originated on the Savannah River Site.

Cherry and Clarke (2007) state in their abstract that, "The source of ground water to production wells at Vogtle Electric Generation Plant (VEGP), a nuclear power plant in Burke County, Georgia, was simulated under existing (2002) and potential future pumping conditions using an existing U.S. Geological Survey (USGS) MODFLOW ground-water flow model of a 4,455-square-mile area in the Coastal Plain of Georgia and South Carolina. Simulation results for three steady-state pumping scenarios were compared to each other and to a 2002 Base Case condition. The pumping scenarios focused on pumping increases at VEGP resulting from projected future demands and the addition of two electrical-generating reactor units. Scenarios simulated pumping increases at VEGP ranging from 1.09 to 3.42 million gallons per day (Mgal/d), with

one of the scenarios simulating the elimination of 5.3 Mgal/d of pumping at the Savannah River Site (SRS), a U.S. Department of Energy facility located across the Savannah River from VEGP. The largest simulated water-level changes at VEGP were for the scenario whereby pumping at the facility was more than tripled, resulting in drawdown exceeding 4-8 feet (ft) in the aquifers screened in the production wells. For the scenario that eliminated pumping at SRS, water-level rises of as much as 4-8 ft were simulated in the same aquifers at SRS.

Results of MODFLOW simulations were analyzed using the USGS particle-tracking code MODPATH to determine the source of water and associated time of travel to VEGP production wells. For each of the scenarios, most of the recharge to VEGP wells originated in an upland area near the county line between Burke and Jefferson Counties, Georgia, with none of the recharge originating on SRS or elsewhere in South Carolina. An exception occurs for the scenario whereby pumping at VEGP was more than tripled. For this scenario, some of the recharge originates in an upland area in eastern Barnwell County, South Carolina. Simulated mean time of travel from recharge areas to VEGP wells for the Base Case and the three other pumping scenarios was between about 2,700 and 3,800 years, with some variation related to changes in head gradients because of pumping changes."

Further information about this study can be obtained by contacting John Clarke at the USGS Georgia Water Science Center at (770) 903-9170 or jsclarke@usgs.gov.

Section 5.4.1.3, Noise, page 5-19

The DEIS states that (page 4-19, last paragraph) "noise from construction can affect wildlife by inducing physiological changes, nest or habitat abandonment, or behavioral modifications, or it may disrupt communications required for breeding or defense (Larkin 1996)." The document goes on to say that impacts on wildlife from *construction* noise therefore "are expected to be negligible." The discussion in Section 4 is focused on construction noise that would generally be short-term. Wildlife also would be exposed to chronic, long-term noise levels from the proposed cooling tower operation and diesel generators. The DEIS states that while the "…noise levels from cooling tower operation and diesel generators are anticipated at 55 decibels (dBA) at 300 m (1000 ft)…this noise level is well below the 80-to-85 dBA threshold at which birds and small mammals are startled or frightened (Golden et al. 1980)." This last statement appears to be generalized addressing potential impacts on terrestrial wildlife based on short-term noise only and not on chronic noise. It is suggested that a literature search be conducted to determine if more recent scientific references are available that document studies on chronic, long-term noise impacts on wildlife and aquatic species and that the findings from these studies be incorporated into the assessment.

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning our comments, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 648-5028 or at lwoosley@usgs.gov.

I can be reached at (404) 331-4524.

Sincerely,

Gregory Hogue
Regional Environmental Officer

cc:
OEPC, Washington
USGS, Reston

REFERENCES

Clarke, John S. and West, C.T., 1998, Simulation of Ground-Water flow and Stream-Aquifer Relations in the Vicinity of the Savannah River Site, Georgia and South Carolina, Predevelopment Through 1992: U.S. Geological Survey Water-Resources Investigations Report 98-4062, 134 p. Available on the Internet at: http://pubs.usgs.gov/wri/wri98-4062/

Cherry, Gregory S. and Clarke, John S., 2007, Simulation and Particle-Tracking Analysis of Selected Ground-Water Pumping Scenarios at Vogtle Electric Generation Plant, Burke County, Georgia, U.S. Geological Survey Open-File Report 2007–1363, 51 p. Available on the Internet at: http://pubs.usgs.gov/of/2007/1363/