

**FINDING OF NO SIGNIFICANT IMPACT AND ADOPTION OF
ENVIRONMENTAL ASSESSMENT PREPARED BY TENNESSEE
DEPARTMENT OF ENVIRONMENTAL AND CONSERVATION
TENNESSEE VALLEY AUTHORITY
HALLSDALE-POWELL NORRIS WATER TREATMENT PLANT
NORRIS RESERVOIR, KNOX AND UNION COUNTIES, TENNESSEE**

Proposed Action and Need

The Hallsdale-Powell Utility District (HPUD) proposes to expand the existing water treatment system in their northeastern service area in Knox and Union Counties, Tennessee. The proposed project would consist of the construction of a new four million gallon per day (MGD) water treatment plant (WTP) located in the Sharps Chapel area in Union County, a raw water intake and pumping station located on Norris Reservoir at Clinch River mile 115.4, approximately 4,000 feet of raw water transmission line from the pump station to the new plant, four miles of 24-inch finished water transmission line crossing the Clinch River at mile 115.8, one mile of 12-inch finished water transmission line, and an outfall for the backwash supernatant to the Clinch River at mile 115.6.

The HPUD is currently experiencing service and pressure problems in the northeastern portion of their service area because of topography, distance, and pressure losses from pumping water across the service area. The four WTPs serving HPUD are either operating at less than capacity because of physical restriction or have been recommended for removal from service because of unreliable sources of water or their small sizes or relative ages. HPUD has recommended that the Dry Gap, Fowler Springs, and Granny Bright WTPs would be removed from service. In 2003, TVA approved the relocation and expansion of the Melton Hill WTP and intake at Mile 2.0 of Bull Run Creek, Anderson County, that will eventually withdraw up to 22 MGD as water demand dictates. The proposed Norris Reservoir WTP would allow an expansion of the service territory, as well as allow supplementation of water available from the Melton Hill intake and in the northeastern portion of the service territory, increase pressure, service quality, and replace contaminated groundwater wells in the Sharps Chapel area.

TVA's action would be to approve the proposed water intake and the supernatant discharge under Section 26a of the TVA Act and to grant a permanent easement over approximately 1.5 acres of TVA public land for the intake and discharge lines and the main transport line.

Impacts Assessment

The Tennessee Department of Environment and Conservation (TDEC), Division of Community Assistance has prepared an environmental assessment (EA) and on May 14, 2004, issued a Finding of No Significant Impact (FONSI) for the project. TVA has independently reviewed the proposed actions and the accuracy, scope, and content of the TDEC-prepared EA and FONSI. TVA has decided to adopt the TDEC EA. It is attached and incorporated by reference (attachment 1). TVA also prepared a categorical exclusion checklist which is incorporated by reference (attachment 2).

During TVA's review of the proposed action, TVA identified potential water quality impacts associated with the supernatant discharge. During dry periods, water in the

embayment would be stagnant and no mixing would occur. TVA was concerned that the proposed ultrafiltration system would concentrate organic material in the raw water such that the discharge could be elevated in organics. Discharge of this waste stream into a stagnant embayment could expedite the depletion of dissolved oxygen. The applicant's engineer submitted data that showed that the membrane selected for this treatment plant did not excessively concentrate organics. Data were also submitted regarding the chemicals used to clean the membrane, citric acid in particular. Concentrations of citric acid in the discharge were expected to be low enough that water quality would not be significantly affected. The NPDES discharge permit addresses constituents used in the coagulation step preceding the membrane filtration and the TDEC Division of Water Pollution Control considered the effects of these chemicals to be minimal. The applicant has redesigned the outfall to include a diffuser and extend the discharge so that the top of the discharge pipe would be at or below the 975 elevation. Impacts to surface water and the aquatic environment resulting from the proposed construction activities would be insignificant with the implementation of Best Management Practices for erosion and sediment control. After considering the additional water quality information and the redesigned outfall, TVA has determined that the water quality impacts in the embayment would be insignificant.

The raw water intake would consist of three pipes with intake screens that would have top elevations of 995.0, 975.0, and 955.0 and the lines would lie on the ground. The end of the discharge line would have a top elevation of 975. In order to decrease the risk to recreational boaters by providing adequate depths for recreational craft to pass, TVA typically requires that all outfalls, intakes, and submerged pipelines including its anchors, supports, and screens be buried down the bank to at least 5 feet below the minimum pool elevation. Since the implementation of the Reservoir Operations Study, there are no longer set minimum pool elevations, only flood guide and balancing guide levels and subsequently, TVA has determined a potential minimum pool elevation of 975 would be sufficient for this project. Because some of the proposed structures are not buried down the bank to five feet below the 975 elevation, the applicant will either submit [to TVA] plans for alerting recreational boaters about the presence of an underwater obstruction, object, or structure for each set of lines; or redesign the intake system and discharge pipe to meet these requirements.

No National Register of Historic Places listed or eligible properties, threatened or endangered species, or wetlands would be affected. The new WTP would not be visible from the reservoir. The lighting at the plant would consist of a few 30-foot poles along the access road and around the building as well as some smaller lights above the doors on the building. The area lighting is high pressure sodium. The optics of the selected fixtures are very directional, they do not project the light upwards or outwards. These lights would be on photocells, and would also be equipped with an override which would allow them to be manually operated. There would be no scheduled construction during the nighttime hours. Therefore, the potential for impacts to visual resources would be insignificant.

Mitigation

TVA's Section 26a approval is contingent upon successful implementation of Best Management Practices for erosion and sediment control including TVA General Conditions 1, 9, and 10, and Standard Conditions 3c, and 6a, 6c through 6i.

Construction will be inspected as part of the entire water treatment plant project and as-built drawings will be submitted to TVA, to verify the outfall redesign was implemented.

The applicant will submit plans [to TVA] for alerting recreational boaters about the presence of an underwater obstruction, object, or structure for each set of lines and discharge or the intake pipe system and discharge will be redesigned to bury all structures five feet below the 975 elevation.

Public and Intergovernmental Review

A public meeting was held on May 10, 2004. No public concerns or objections to the project were voiced at the public meeting. No citizens attended the meeting, which was advertised in local newspapers.

Conclusion and Findings

For compliance with Section 106, TVA has determined that there are no National Register of Historic Places listed or eligible properties affected by this project and the Tennessee Historical Commission concurred by letter of February 3, 2004 (attachment 3). TVA has determined that the proposed construction and operation would have no effect on endangered and threatened species from its land and 26a approval actions. By letter of June 9, 2004, the U.S. Fish and Wildlife Service concurred that no wetlands or threatened or endangered species would be adversely affected by the project (attachment 4). Pursuant to Executive Order 11988, the water intake structure and outfall is considered to be a repetitive action in the floodplain for which there is no practicable alternative. In accordance with Executive Order 11990, no wetlands would be affected. Navigation issues were resolved by requiring signage to alert the recreating public of an underwater structure.

Based on the TDEC-prepared EA and TVA's further review, TVA has concluded that the impacts on the environment have been adequately addressed; and necessary mitigation has been identified. We conclude that the proposed action would not be a major federal action significantly affecting the environment. Accordingly, an Environmental Impact Statement is not required. This FONSI is contingent upon successful implementation of the mitigation measures previously identified.

Brodyeagen
for

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August 20, 2004

Date Signed