



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

June 30, 2003

State of Tennessee  
Department of Environment and Conservation  
Chattanooga Environmental Assistance Center  
Division of Water Pollution Control  
State Office Building, Suite 550  
540 McCallie Avenue  
Chattanooga, Tennessee 37402-2013

Attention: Richard D. Urban, Ph.D., Field Office Manager

Dear Dr. Urban:

**TENNESSEE VALLEY AUTHORITY (TVA) - SEQUOYAH NUCLEAR PLANT (SQN) -  
NPDES PERMIT NO. TN0026450 - APPLICATION FOR RENEWAL**

Enclosed are two copies of the National Pollutant Discharge Elimination System (NPDES) renewal packet for SQN consisting of NPDES Permit Application Addresses Form, EPA Form 1 with an attachment for additional permits, site map, flow schematic, and EPA Form 2C (one form for each Outfall – 101, 103, 107, 110, 116, 117, and 118). For Outfalls 110 and 118, Part V-A, B, and C are not included since the outfalls were not sampled. A note has been made on Part II of the 2C forms for both outfalls indicating why the outfalls were not sampled.

TVA would appreciate consideration of the following in the renewed permit.

**Outfall 101**

1. Enclosed is a summary of the Reasonable Potential (RP) evaluation and toxicity test results since August 1988. As discussed in the enclosure, TVA believes that deleting the Whole Effluent Toxicity (WET) limit and requiring biomonitoring at a frequency of only once every five years as part of the permit renewal process would be appropriate for current operating conditions. However, because TVA has submitted a request for a modification of the chemical addition program for biofouling organisms control, TVA requests that the current quarterly frequency be maintained with no WET limit until sufficient tests have been conducted (i.e., at least ten WET tests over a period of three years) to determine if an RP exists and if a limit is needed. TVA proposes that the monitoring frequency be reduced to annually if no toxicity is demonstrated during the time required for the RP determination.

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2. TVA requests continuation of the 316(a) variance and water temperature monitoring requirements as incorporated in the current permit. Based on the results summarized in the enclosed "Biological Monitoring of the Tennessee River Near Sequoyah Nuclear Plant Discharge 2001" and "Biological Monitoring of the Tennessee River Near Sequoyah Nuclear Plant Discharge 2002" reports, TVA believes that thermal discharges from SQN have not had a negative effect on the maintenance of a balanced indigenous fish population in Chickamauga Reservoir. Also enclosed are additional reports for studies related to Clean Water Act Section 316 evaluations as required by Part III, Section F of the current NPDES permit and the study to confirm the calibration of the numerical model as required by Part III, Section G. Please note that the studies for the ambient river temperature and mixing zone are ongoing and currently are expected to be completed in September 2004. Also note that the reports provided herein for these studies and for the calibration of the numerical model are draft copies. Final versions will be provided, following the completion of TVA internal review.
3. The permit currently requires that "if the Condenser Cooling Water (CCW) system is chlorinated or none of the units are discharging flow from the CCW system, grab samples shall be collected at the diffuser gate and analyses performed not less than three days per week with four grab samples collected during one shift per day. Under no circumstances, other than listed above, shall the results of the diffuser gate sampling be reported in lieu of the Total Residual Chlorine calculations noted herein." TVA requests that the present permit language and monitoring requirements be removed for the renewed permit. SQN procedures prohibit treatment of cooling water systems when the dilution flow from untreated cooling water drops below that necessary for compliance with the effluent concentration limit (e.g., an extremely rare event such as CCW pumps not being in operation). This approach will ensure that effluent limitations are met under the proposed operating conditions.
4. In response to TVA's March 10, 2003 request for modifications to the bio-fouling treatment duration (letter from Saya Ann Qualls, P.E. to Mr. Michael G. Beavers dated April 25, 2003), the division indicated that daily sampling of the effluent for TRO at the diffuser gate (Outfall 101) would be required during periods of continuous chlorination treatment of the Essential Raw Cooling Water (ERCW) and Raw Cooling Water (RCW) systems with analysis of the samples to be performed using a method with a quantitation limit below the monthly average limit of 0.036 mg/L. SQN is currently working in parallel with TVA Watts Bar Nuclear Plant (WBN) to mimic WBN's field study to determine SQN's Method Detection Limit and Limit of Quantification for TRO. Concluding SQN's study, a joint letter between SQN and WBN will be submitted to the division outlining and requesting approval of TVA's position on TRO limits for SQN and WBN. Also, at that time a revision of SQN's Best Management Practices (BMP) Plan will be

submitted for approval. TVA will request that the present permit language be modified to reflect TVA's position on TRO limits for the Tennessee nuclear facilities.

5. TVA requests a reduction in the monitoring frequency for Oil and Grease and TSS from weekly to monthly. Of the over 500 analyses performed since June 1999, Oil and Grease concentrations have been less than detectable with the exception of three samples which measured only 6-8 mg/L. In addition, multiple barriers are in place to prevent discharges of oil into the diffuser pond such as best management practices and the operational characteristics of the turbine building sump. Over this same time period, the results for TSS have generally been less than 10 mg/L. The maximum concentration of any TSS sample for this period was 29 mg/L, which is still well below the daily maximum limit of 100 mg/L. The decrease in monitoring frequency to monthly would be consistent with the NPDES permits for TVA fossil plants located in Tennessee.

#### Outfall 110

This outfall consists of discharges from the cooling tower blowdown basin to the cold water return channel which may occur during closed and helper mode operation of the cooling towers. TVA requests that the description of this outfall be corrected in the renewed permit to the previous permit (prior to August 8, 2001) conditions. Also, TVA requests deletion of metal cleaning wastes and the chemical monitoring requirements associated with metal cleaning wastes for this outfall. A copy of Outfall 110 from the previous permit has been enclosed for your reference.

#### Outfalls 116 and 117

TVA requests that the reporting requirement for observations of these discharges be deleted. Historically, there have been no problems with visible sheen or floating matter. Also, BMPs are in place to control trash and debris as required by the permit. Deletion of the reporting requirement would be consistent with the NPDES permits for TVA fossil plants located in Tennessee which have similar intake screen backwash systems.

#### Miscellaneous

1. A list of chemicals used at SQN that are potentially present in discharges is maintained on-site and is available upon request.
2. It should also be noted that the SQN flow diagram which accompanies EPA Form 2C has been updated and simplified for easier reading.

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3. Outfall 107 was sampled for 12 hours rather than 24 during a separate sampling event. The reason is that the ponds are normally only operated for 12 hours when pumping is required. During the 12-hour sampling event, two grabs were collected (every 6 hours) and 8 aliquots (every one and one-half hour).
4. Outfalls 116 and 117 were sampled as one time grabs following the completion of the 24-hour sampling event. Discharges from these outfalls occur only during required backwashing of screens and strainers.
5. A resample of Outfall 103 was conducted for fecal coliform during the Outfall 107 sampling event, because the previous results were questionable. Three samples were collected (every six hours). Six analyses were reported. One analysis from the first event was excluded since it was too numerous to count (TNTC). The reasoning behind the elevated results on the first event was due to a large population of birds on the pond.

If you have any questions or need additional information, please contact Ann Hurt at (423) 843-6714 or Stephanie Howard at (423) 843-6713 of Sequoyah's Environmental Staff.

Sincerely,



Richard T. Purcell  
Site Vice President  
Sequoyah Nuclear Plant

Enclosures  
cc (Enclosures):

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