



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

September 13, 2011

Mr. Vojin Janjić, Manager  
Permit Section  
Division of Water Pollution Control  
Tennessee Department of Environment  
and Conservation (TDEC)  
6th Floor, L&C Annex  
401 Church Street  
Nashville, Tennessee 37243-1534

Dear Mr. Janjić:

**TENNESSEE VALLEY AUTHORITY (TVA) – SEQUOYAH NUCLEAR PLANT  
(SQN) – NPDES PERMIT NO. TN0026450 – ALTERNATE THERMAL LIMIT (ATL)  
STUDY PLAN**

TVA has received your approval letter dated August 10, 2011, for the SQN ATL Study Plan and requests that TDEC reconsider TVA's proposal not to sample during summer months. The facility thermal discharge during the summer is limited in the NPDES permit to the state's promulgated ambient water quality criteria for temperature. No permitted ATL is allowed or used during the summer months at SQN.

From your letter, it appears that TVA's request was denied based on TDEC's concern for climate change effects on reservoir system management, particularly with regard to low flow frequency as it might relate to SQN thermal discharge impacts to the receiving water body.

TVA believes there may be some misunderstanding about how the river/reservoir system is managed relative to SQN. We are providing the following information for TDEC's re-consideration. Hopefully, this information will lay the groundwork for further discussion on this matter:

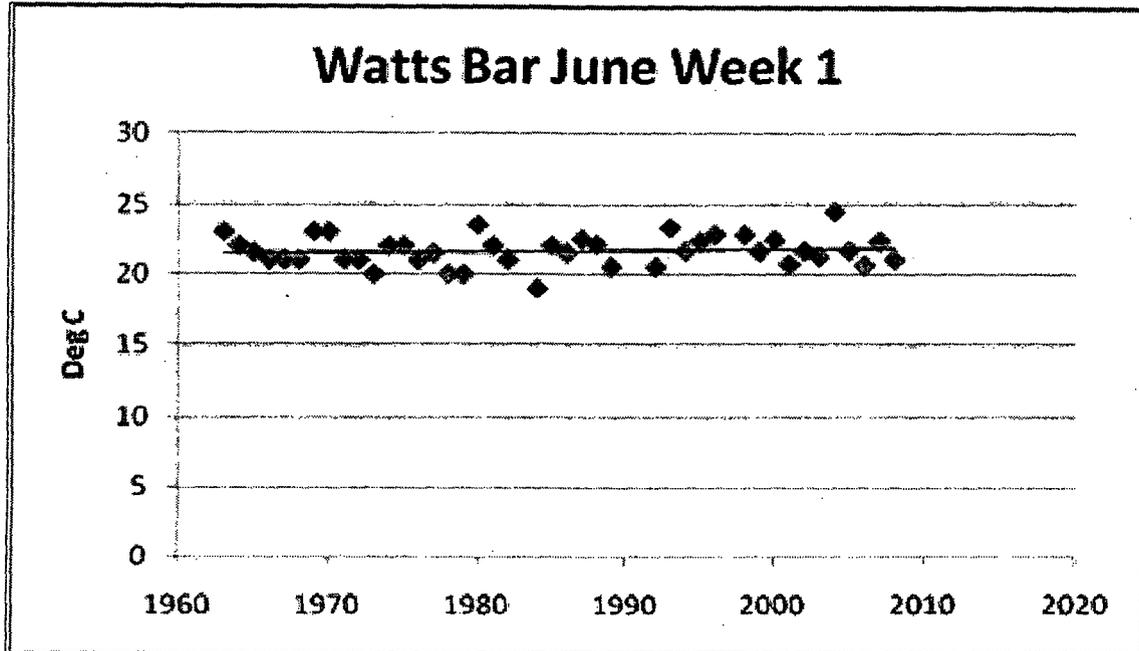
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- There are no “flow criteria” for SQN established by the TVA’s Reservoir Operations Study (ROS) as stated in the TDEC SQN ATL Study Plan approval letter. The ROS considered multiple demands on the river system throughout the year and balanced those demands with recreational benefits of higher pool elevations in tributary reservoirs. The result is the ROS establishes flows that best benefit all uses ranging from drinking water supply to recreation.
- The primary compliance tool TVA uses to meet TDEC is water quality criteria (i.e., NPDES discharge limits) for temperature at SQN during summer months is cooling tower operation. Effectiveness of cooling tower operation and TVA operating policy were demonstrated by SQN’s compliance with its permit in 2007, a very dry year; and in 2010, a very hot year.
- During 2007, TVA’s reservoir operating policy demonstrated that the main stem rivers are resistant to drought effects; at least 25,000 cfs of flow through Chickamauga Reservoir was provided even under extreme drought conditions experienced during that year.
- The maximum SQN discharge temperature recorded during the most recent 5-year permit compliance monitoring period (2006-2011) was 31.3°C (88.3°F) (hourly value), which occurred July 31, 2010, compared to the 1-hr average river temperature at the downstream edge of the mixing zone of 33.9°C (93.0°F). So, even during an extremely hot summer, SQN’s discharge temperature was well below the permit maximum.

TVA routinely conducts a variety of analyses on rainfall, runoff, and flow data covering multiple decades as part of the Agency’s river operation and stewardship responsibilities. These analyses are useful in discerning potential trends of climate change. These analyses show:

- There are no changes in the statistical trends in either annual rainfall or runoff for the Tennessee River watershed above Chickamauga Dam for the past 50 years.
- There is no change in the statistical trend in runoff during the critical reservoir filling season of March through May for the past 50 years.
- There is no change in the statistical trend in water temperatures entering Chickamauga Reservoir from Watts Bar Reservoir during early June for the period 1962 – 2008 (as shown in the following chart) for the past 50 years.

**Water temperatures measured entering Chickamauga Reservoir  
from Watts Bar Reservoir during early June for the period 1962 – 2008**



SQN meets state temperature water quality criteria during summer (even very hot and dry summers) and TDEC's water quality criteria have been pre-established by TDEC and EPA to be protective of aquatic life and other designated uses. If the permitted SQN discharges required an ATL during summer, TDEC's desire for summer sampling would be understandable. However, in the absence of an ATL, TVA believes that summer sampling is unnecessary and unjustified. TVA respectfully requests that this requirement be withdrawn from the Study Plan approval.

In addition, as you are aware, TVA has significantly expanded monitoring efforts to support the permitted hydrothermal limits for our facilities throughout Tennessee and EPA Region IV. These expanded monitoring efforts are resource- and cost-intensive. In our opinion, available resources should be focused on water bodies with greater potential for impacts. At this time the summer sampling at SQN is unwarranted.

If it would be beneficial to TDEC, TVA is willing to meet with TDEC and provide detailed information on how TVA operates the river system under the current

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reservoir operating policy established by the ROS. We welcome the opportunity to meet with you at your earliest convenience.

If you have questions, need additional information, or would like to schedule a meeting please contact Sam Hixson in Chattanooga at (423) 751-6705 or by email at [swhixson@tva.gov](mailto:swhixson@tva.gov).

Sincerely,



Cynthia M. Anderson  
Senior Manager  
Compliance Interface and Permits

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