



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

September 15, 2003

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.

Dear Dr. Urban:

**SEQUOYAH NUCLEAR PLANT AND WATTS BAR NUCLEAR PLANT – REPORTING OF
TOTAL RESIDUAL OXIDANT ON DISCHARGE MONITORING REPORTS**

Environmental and Chemistry staff from the TVA Nuclear (TVAN) business unit have evaluated the division's letter to Sequoyah Nuclear Plant (SQN) dated April 25, 2003 and discovered issues that impact both the Sequoyah and Watts Bar Nuclear (WBN) plants. The division's letter requires SQN to report Total Residual Oxidant (TRO) to a quantitative limit below 0.036 mg/L which is SQN's monthly average concentration limit. In evaluating this requirement, it was determined that SQN and WBN have been inconsistent in determining the minimum detectable values of their TRO analyses.

WBN reports the *Method Detection Limit* (MDL) which is 3.14 times the standard deviation for 7 replicate measurements at or near the limit of detection according to the DPD Colorimetric Method found in Standard Methods, 18th Edition, procedure 4500-CI G. This MDL value has been determined to be 0.02 mg/L and the *Minimum Level of Quantification* (ML) was determined to be 0.08 mg/L using a river water matrix and accounting for chlorine demand at WBN.

SQN uses the *Limit of Quantitation* (LOQ) value as determined by Standard Methods for the DPD Ferrous Titrimetric method, 4500-CI F. This value is 10 times the standard deviation and has been determined to be 0.10 mg/L at SQN for TRO. SQN is implementing the DPD Colorimetric Method found in Standard Methods, 18th Edition, procedure 4500-CI G and has determined the method's MDL to be 0.02 mg/L and the ML to be 0.05 mg/L. SQN's values have also been determined using a river water matrix and accounting for chlorine demand.

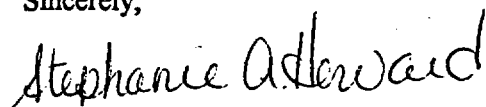
Throughout the regulated community, there is significant variability in the minimum detectable values being reported on DMRs for analyses such as TRO. This inconsistency is due in large part to the numerous terms that have been used in the scientific community to describe the sensitivity of a particular method or instrument. EPA has proposed regulations to remedy this inconsistency. TVA has expressed concerns with the proposal in comments submitted to the EPA. However until this issue is resolved, the solution suggested in the Federal Register's proposed rule dated March 12, 2003 is satisfactory, since the TRO analyses are performed on-site. TVAN is, therefore, proposing to analyze and report TRO using the ML. The ML is 10 times the standard deviation for the replicate measurements. Due to the statistical variation of

performing an analysis using a limited number of replicates at or near the lower limit of detection, SQN and WBN will conservatively report an ML of 0.08 mg/L. If at any time, both the sample analysis and the established permit limit is less than the ML of 0.08 mg/L, the reporting facility (SQN or WBN) will report <0.08 on the DMRs. For purposes of evaluating compliance and calculating averages, these values will be considered to be equal to 0 mg/L.

SQN and WBN request the division's concurrence with this proposed solution for consistency in reporting within TVAN. Failure to attain this concurrence as previously proposed in Sequoyah's March 10, 2003 letter addressed to Mr. Larry Bunting in support of the continuous treatment, could result in compromising nuclear safety-related systems. Please contact SQN's Dick Adcock at (423) 843-7438 or WBN's Rob Crawford at (423) 365-8005 for a review of the techniques and analytical data used to establish the ML at each facility. The complete response from SQN to the division's letter dated April 25, 2003 is pending resolution of this issue. Please contact SQN's Stephanie Howard at (423) 843-6700 or WBN's Rob Crawford at (423) 365-8005 if you have any questions or comments.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Stephanie A. Howard
Acting Environmental Supervisor
Signatory Authority for
Richard T. Purcell
Site Vice President
Sequoyah Nuclear Plant



Robert J. Crawford
Environmental Supervisor
Watts Bar Nuclear Plant

cc: Mr. Larry Bunting
State of Tennessee
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