

## TENNESSEE VALLEY AUTHORITY

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NOV 11 1990

U.S. Nuclear Regulatory Commission  
 ATTN: Document Control Desk  
 Washington, D.C. 20555

Gentlemen:

In the Matter of )  
 Tennessee Valley Authority )

Docket No. 50-327  
 50-328

SEQUOYAH NUCLEAR PLANT (SQN) - TEMPORARY DEVIATION FROM REGULATORY GUIDE  
 (R.G.) 1.97 - SHIELD BUILDING STACK RADIATION MONITORING

Reference: TVA letter to NRC dated May 7, 1990, "Regulatory Guide (RG)  
 1.97 - Finalized Program"

The purpose of this letter is to provide NRC with two additional temporary deviations from RG 1.97 beyond those contained in TVA's previously submitted program to comply with RG 1.97, Revision 2 (referenced letter). The details of these deviations were discussed during a November 11, 1990, telephone conference call between NRC and TVA staffs. The specific deviations address RG 1.97 required indication and ranges over which the post-accident gaseous effluents must be monitored. The temporary deviations from RG 1.97 concern the new post-accident instrumentation that monitors the shield building exhaust vent stack (air flow and airborne radioactivity levels) for off-site dose assessment. TVA has experienced unexpected problems in calibrating the flow sensors that provide an input to a microprocessor for computing and indicating total air flow from the shield building stack. TVA is working closely with the vendor to resolve this problem and to improve electronic reliability of the installed equipment. TVA anticipates that these actions can be completed within approximately four weeks. The basis for the four-week estimated duration includes time for troubleshooting and monitoring of system performance after being placed into service as well as for the actual resolution of the current flow sensor problems. Although not fully meeting RG 1.97 requirements, existing plant instrumentation for SQN's shield building stack will be used during this interim period and provides acceptable indication and monitoring capabilities for post-accident release assessment.

Enclosure 1 contains a detailed description and justification for TVA's temporary deviations from RG 1.97. These deviations are applicable to Units 1 and 2. As agreed upon in the November 11 telephone conference call, these temporary deviations from RG 1.97 will expire on December 10, 1990. Enclosure 2 contains the TVA commitment for establishing full compliance with RG 1.97 for the subject instruments.

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U.S. Nuclear Regulatory Commission

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Please direct questions concerning this issue to D. V. Goodin at (615)  
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Very truly yours,

TENNESSEE VALLEY AUTHORITY



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Enclosure

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ENCLOSURE 1  
TEMPORARY DEVIATION

Variable (105)

Shield Building Exhaust Flow Rate

Deviation from RG 1.97

RG 1.97, Revision 2, recommends that exhaust flow rates be monitored over a range from 0-110 percent of design flow rate (0-18,700 cubic feet per minute). TVA proposes to use a maximum flow rate that is based on the design flow rate for each fan that is in-service postaccident.

Justification

The total flow rate from SQN shield building vent stack is dependent upon the number of gas treatment fans that are in-service following an accident. For the accident unit, these fans include one auxiliary building gas treatment fan (9000 cubic feet per minute [cfm]), and two emergency gas treatment fans (8000 cfm), for a total flow rate of 17,000 cfm. SQN's methodology for evaluating shield building exhaust flow rates under postaccident conditions is Technical Instruction (TI)-30, "Manual Calculation of Plant Gas, Iodine, and Particulate Release Rates for Technical Specifications Compliance Evaluation." This procedure currently contains provisions for conservatively estimating shield building exhaust flow based on design flow rates of fans in-service. This methodology is consistent with the actions which would be taken in the event of instrumentation failures. TVA will utilize the methodology described above (TI-30) for the interim period needed to resolve RG 1.97 instrumentation problems.

ENCLOSURE 1  
TEMPORARY DEVIATION

Variable (112 and 27)

Shield Building Exhaust Radiation Level (particulates, halogens, and noble gas)

Deviation from RG 1.97 Guidance

RG 1.97, Revision 2, recommends a range between  $10^{-3}$  uCi/cc to  $10^2$  uCi/cc. TVA proposes to temporarily utilize the existing radiation monitors RE-90-100A (particulate) and RE-90-100C (halogen), having a range between  $2.32 \times 10^{-11}$  to  $1.75 \times 10^{-5}$  uCi/cc for particulate and  $2.0 \times 10^{-11}$  to  $9.0 \times 10^{-6}$  uCi/cc for halogens. Effluent sampling for particulates and halogens for the higher range is not currently provided. RG 1.97, revision 2, requires a range adequate to measure worst-case releases. Overlap between monitors used for noble gas monitoring (RE-90-100B, RE-90-260 and RE-90-261) is not considered sufficient to meet the intent of RG 1.97.

Justification

The radiation monitors currently installed at SQN are designed to detect and measure releases associated with normal reactor operations and anticipated operational occurrences. Under accident conditions, SQN would utilize site and off-site monitoring and analysis equipment to quantify release rates for particulates and halogens over the range required by RG 1.97. In addition, analysis of containment air samples taken in SQN's post-accident sampling facility would provide information for assessing potential iodine release. TVA considers this methodology to be acceptable for the interim period needed to resolve RG 1.97 instrumentation problems.

It should be noted that existing radiation monitor RE-90-100B (noble gas) and noble gas accident range monitors (RE-90-260 and RE-90-261) will be available during the four-week interim period for monitoring noble gas concentrations from the shield building stack to cover the accident range required by RG 1.97.

ENCLOSURE 2

TVA will bring the shield building stack radiation monitoring in to full compliance with RG 1.97, revision 2 requirements, by December 10, 1990, for Units 1 and 2.