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

September 17, 2002

10 CFR 50.90

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

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING TECHNICAL SPECIFICATION (TS) CHANGE 01-04, "REVISED ICE WEIGHT" (TAC NOS. MB3682 AND MB3683)

Reference: Letter from NRC to TVA dated September 6, 2002, "Request for Additional Information on Technical Specification Change No. 01-04, "Revised Ice Weight"

This letter provides the additional information requested by the reference letter to support NRC review of SQN TS Change 01-04. The enclosure provides TVA responses to the NRC staff questions.

D030

This letter is being sent in accordance with NRC RIS 2001-05. Please direct questions concerning this issue to me at (423) 843-7170 or James D. Smith at (423) 843-6672.

Sincerely,

Pedro Salas
Licensing and Industry Affairs Manager

Subscribed and sworn to before me
on this 17th day of September

Notary Public

My Commission Expires May 9, 2005

Enclosure
cc (Enclosure):
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ENCLOSURE

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
SEQUOYAH (SQN) TECHNICAL SPECIFICATION (TS) CHANGE NO. 01-04,

The following provides TVA's responses to the NRC request for additional information (RAI) dated September 6, 2002. The additional information supports TVA's TS Change No. 01-04, "Revised Ice Weight."

NRC Question 1:

What is the significance of the containment spray switchover interval (156 seconds)?

TVA Response

The containment spray pumps take suction from the refueling water storage tank (RWST) during the injection mode of the design basis containment pressurization analysis (i.e., large break loss-of-coolant accident). Upon receipt of a low-low level signal from the RWST, the containment spray pumps are stopped by operator action and are realigned to the containment sump in accordance with the steps outlined in Final Safety Analysis Report (FSAR) Table 6.3.2-4 (Sheet 2). Based on the RWST contained volume and the rate of emergency core cooling system injection flow, the low-low level setpoint is reached 2803 seconds into the transient. The analysis conservatively assumes more than 5 minutes (310 seconds) for the operator actions required to realign the containment spray pumps to the containment sump and initiate cooling water flow to the containment spray heat exchangers. Operation of the containment spray system in the sump recirculation mode occurs 3113 seconds into the transient.

Initially, containment pressure suppression is provided primarily by the ice condenser system. Upon ice bed meltout, containment pressure suppression is provided primarily by the removal of containment heat through the containment spray heat exchangers. To ensure that there is no lapse in containment heat removal, the containment spray system must be in operation in the recirculation mode prior to ice bed meltout. As such, one of the acceptance criteria for the containment pressure analysis is that the ice condenser contains sufficient ice mass to ensure that ice bed meltout occurs after containment spray is in the recirculation mode.

The time interval between the completion of containment spray recirculation switchover and the ice bed meltout is margin to this acceptance criteria.

NRC Question 2

Explain the importance of maintaining the current time interval (156 seconds) between the containment spray switchover time and ice bed meltout time.

TVA Response

The only importance of maintaining the subject interval was a TVA preference for maintaining or improving the existing analytical margin.

As discussed in the response to Question 1 above, the time interval between the completion of containment spray switchover and ice bed meltout is margin to an established acceptance criteria. The only importance of maintaining this time interval is the preference for keeping the existing margins as opposed to decreasing the time interval to minimize an increase in ice mass.

NRC Question 3

What is done to ensure that the heat transfer coefficient (UA) value of the containment spray heat exchanger is maintained?

TVA Response

Calculations have been performed to establish the maximum number of tubes that can be plugged in the containment spray heat exchangers such that the heat transfer coefficient assumed in the long-term containment integrity analysis is met. The calculations assume maximum heat exchanger fouling as well as other assumptions that are consistent with the limiting assumptions of the long-term containment integrity analysis. The tube plugging limit established by the calculations are controlled by plant procedures.

To minimize component fouling, the raw water shell side of the component heat exchangers is maintained in a chemically controlled layup condition with demineralized water and a corrosion inhibitor. Periodic monitoring of the water in the shell side of the heat exchangers is performed. Periodic maintenance and inspection is performed on the shell side for MIC, clams and mussels, silt, biofouling, and corrosion products. Service exposure on the tube side of the heat exchangers is limited to normal recirculation flow from the RWST.

NRC Question 4

What was the value assumed in the original analysis for Ultimate Heat Sink temperature?

TVA Response

As indicated in Section 6.2.1.3.4 of the FSAR, the current containment integrity analysis assumes an ultimate heat sink temperature of 85 degrees Fahrenheit.