Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379

September 9, 1994

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) - INSPECTION REPORT NOS. 50-327, 328/94-26 - SPECIAL INSPECTION OF MAIN STEAM CHECK VALVES (MSCVs) - RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

On August 22, 1994, a telephone conference was held between the NRC staff and TVA, relative to the MSCV inspection that was performed at SQN during the periods of August 5 and August 10-11, 1994. In the telephone conference, the NRC staff requested a written response to five items. TVA's response is provided in the enclosure.

If you have any questions concerning this submittal, please telephone R. H. Shell at (615) 843-7170.

Sincerely,

O. J. Zeringue
Acting Site Vice President
OPS 4A-SQN

Enclosure
cc: See page 2

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cc (Enclosure):
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ENCLOSURE

This enclosure provides a response to the following items that were identified in the August 22, 1994, telephone conference between NRC and TVA.

1. Identify to NRC the site organization responsible for the repair, inspection, and monitoring of the main steam check valves (MSCVs).

2. Describe the monitoring methodology applicable to the Unit 1 MSCVs for ensuring disk/post continuity.

3. Provide the inspection schedule for the inspection of the disk/post lock weld on the Unit 1 MSCVs.

4. Provide the details of the weld inspection methodology, including the method of inspection, the inspection acceptance criteria, and the implementing organization.

5. Describe the repair process for indications identified in the disk/post lock-weld area of the Unit 2 MSCVs.

TVA Response:

1. The Component Engineering section has the overall responsibility for MSCVs. The Component Engineering section is in the site Maintenance and Modifications Manager's organization. This section is supported by the Nuclear Assurance (Quality Control), Engineering, Modifications (Welding Engineering), and Technical Support organizations. The inspection of the valve is conducted by a component engineer for the identification of component wear and physical damage. Quality Control inspectors perform a nondestructive examination of the disk/post lock weld upon valve disassembly and of weld material deposited during valve repair. The welding engineer provides welding process oversight. Repair instructions are provided by the site Engineering organization. The Technical Support organization performs the monitoring of MSCVs during plant operation.

2. As a result of the indications found on the Unit 2 MSCVs, the Technical Support organization will perform Unit 1 MSCV monitoring on a monthly basis. To perform this monitoring, the position of the counterweight arms for each valve will be marked on the surrounding structural steel while the valves are in the open position during system operation (to identify a baseline condition). Then on a monthly basis through the remainder of the Unit 1 fuel cycle, the position of the Unit 1 valves will be checked against the baseline mark to ensure that the counterweight arm has not lowered. The lowering of the counterweight arm is an indication of disk and post separation. Baseline marks on Unit 1 will be made during the month

of September, with monthly monitoring beginning the following month. The monitoring of Unit 2 MSCVs after the completion of valve repairs is not required. Test results of the indications found on the Unit 2 valves indicate that material preheat and postweld heat treatment will resolve the condition.

3. Based on the disk/post lock-weld indications found on the Unit 2 valves and a subsequent material examination, no disassembly or inspection is scheduled to be performed on the Unit 1 valves before the upcoming refueling outage. Of the four Unit 1 MSCVs, three valves (Loops 1, 2, and 3) are scheduled for disassembly and inspection during the Unit 1 Cycle 7 refueling outage. However, for conservatism, the Loop 4 valve will also be disassembled and inspected during the Unit 1 Cycle 7 refueling outage. The linear indications in the lock-weld area that were observed on the Unit 2 valves did not encompass the full circumference of the lock weld. Additionally, the linear indications were sufficiently discontinuous and irregular such that if the indications did encompass the full circumference of the lock-weld area, the resultant mechanical binding would prevent the loss of post-to-disk pretorque. Therefore, with the pretorque, disk/post separation is not expected to occur.

4. A visual and dye penetrant inspection is performed on the disk/post lock weld upon disassembly of the valve. Any indications identified within the American Society of Mechanical Engineers (ASME) Section III criteria are documented. These inspections are performed in accordance with ASME Section III, N-VT-3 and N-PT-9 requirements. No additional acceptance criteria is required for this inspection because the weld is removed to allow disassembly of the disk from the post. This inspection is performed by a qualified quality control inspector from the Nuclear Assurance organization. For reassembly of the disk to the post, at least 48 hours after completion of the disk/post lock welds on the Unit 2 components, a visual inspection and a nondestructive dye penetrant examination will be performed by a quality control inspector. These inspections will be performed in accordance with ASME Section III, N-VT-3 and N-PT-9 criteria.

5. The following is an outline of the disk/post repair steps:

   a. The lock weld is inspected (see Item 4 for details).

   b. A verification of disk-to-post preload torque is performed.

   c. A visual inspection of the disk threads is performed.

   d. A new post is fabricated, and the threads are field-fit to the individual disks. The connection is checked for tightness at various depths to ensure proper fit.

   e. Base metal repair to the disk is performed to restore the area where the lock weld was removed. The repair will be accomplished by cleaning the weld area with acetone or liquid penetrant

remover, preheating to 250 degrees Fahrenheit (F), installing weld material while maintaining the 250-degree preheat, and maintaining a postweld temperature of 250 degrees F for 2 hours. The lock-weld bevel will be machined into the disk, and a visual inspection will be performed. A magnetic particle examination (N-MT-6) will be performed at least 48 hours after completion of the weld.

f. The post will be lubricated and installed into the disk to 2,500 foot-pounds torque with a plus 10 percent tolerance.

g. The lock weld will be installed by cleaning the joint with acetone or dye penetrant remover, preheating to 250 degrees F, depositing weld material while maintaining the 250-degree preheat, and maintaining a postweld temperature of 250 degrees F for 2 hours. A visual inspection and dye penetrant examination (N-PT-9) will be performed at least 48 hours after weld completion.

h. During reassembly of the valve, disk seating and disk backstop contact will be verified.