



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

October 23, 1995

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) - ADDITIONAL INFORMATION FOR IN-SERVICE
INSPECTION (ISI) PROGRAM RELIEF REQUESTS 1-ISI-25 AND 2-ISI-30

Reference: TVA letter to NRC dated May 26, 1995, "In-Service Inspection (ISI)
Program Relief Request to Close-Out The First 10-Year ISI Interval"

Enclosed is additional information to support NRC review of the subject relief requests. On October 4, 1995, a telephone conversation was held between SQN Site Licensing, SQN ISI staff, and NRC. During the telephone conversation, NRC requested clarification regarding the scope of the augmented examinations for two reactor vessel welds. SQN's ISI Program required a 100 percent examination of these welds, however, a full 100 percent code examination was not achieved due to design limitations and inaccessibility. During the telephone conversation, NRC requested that TVA submit additional information and clarify what efforts were made to accomplish a full 100 percent examination coverage. In addition, it was suggested that the subject relief request be considered as proposed alternative examinations for these welds in accordance with 10 CFR 50.55a(g)(6)(ii)(A)(5).

Please direct questions concerning this issue to D. V. Goodin at (423) 843-7734.

Sincerely,

R. H. Shell
Manager
SQN Site Licensing

Enclosure
cc: See page 2

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ENCLOSURE

ADDITIONAL INFORMATION FOR

RELIEF REQUESTS 1-ISI-25 AND 2-ISI-30

Below is additional information for alternate examinations pursuant to 10 CFR 50.55a(g)(6)(ii)(A) that was requested by the NRC staff during an October 4, 1995, telephone conversation.

Access Limitations - Examination From Interior Surface

The design configuration of the reactor vessel core support lugs (6) places limitations on the ultrasonic examination of the bottom head to lower shell weld (W02-03) from the vessel interior surface. Automated ultrasonic examinations were performed by Southwest Research Institute on all accessible areas of the bottom head to lower shell weld. The ultrasonic examination techniques provided below were used:

1. 0-degree longitudinal-wave examinations were performed for detection of laminar reflectors that might affect interpretation of angle-beam results.
2. 0-degree longitudinal-wave examinations were performed for detection of reflectors in the weld and base material.
3. 45- and 60-degree shear-wave examinations were performed for detection of reflectors oriented parallel to the weld axis and located in the weld and base material.
4. 45- and 60-degree shear-wave examinations were performed for detection of reflectors oriented transverse to the weld axis and located in the weld and base material.
5. 50/70 degree bi-modal examination techniques were used to examine for reflectors in the clad-to-base metal interface region and the inner 25 percent of material. These examinations were performed to detect reflectors oriented both parallel and transverse to the weld axis.

Access Limitations - Examination From Exterior Surface

Ultrasonic examinations from the reactor vessel external surface on the bottom head to lower shell weld are impractical due to the extremely high radiation dose rates. In addition, the access to the reactor vessel bottom head lower shell weld is extremely limited due to the vessel insulation, biological shield wall around the vessel and incore instrumentation at the bottom of the vessel. Based on the above limitations and high dose rates, it is impractical to perform ultrasonic examinations on the reactor vessel bottom head to lower shell weld (W02-03) from the external surface of the reactor vessel.

Extent of Examination Achieved

The accessible portions of the reactor vessel bottom head to shell weld (W02-03) were ultrasonically examined from the vessel interior. Because of the limited access between the vessel and biological shield wall, conducting the examinations from the

external surface for the purpose of investigating the small amount of weld volume missed during the ultrasonic examinations from the interior surface would require the destruction of the insulation during the removal process, excessive radiation dose, and substantial costs without providing any substantial increase in the quality and safety of the units

Pursuant to 10 CFR 50.55a(g)(6)(ii)(A) - Alternative Examinations

The extent of examination volume achieved ultrasonically (reference Relief Requests 1-ISI-25 and 2-ISI-30), the Visual Test (VT) 3 examination of the vessel interior, and system leakage test jointly provide assurance of acceptable level of quality and safety. As an alternative, TVA performed the following examinations:

1. Automated ultrasonic examinations were performed to the extent practical on all reactor pressure vessel welds (including all eight nozzles) from the inside diameter.
2. VT-3 examinations were performed each inspection period on the reactor vessel interior in accordance with Examination Category B-N-1, Table IWB-2500-1.
3. VT-2 examinations (system leakage tests) were performed each refueling outage in accordance with Examination Category B-P, Table IWB-2500-1.