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

Robert A. Fenech
Vice President, Sequoyah Nuclear Plant

April 20, 1993

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) - NRC INSPECTION REPORT NOS. 50-327, 328/93-05 - REPLY TO NOTICE OF VIOLATION (NOV) 50-327, 328/93-05-03

Enclosed is TVA's response to Paul E. Fredrickson's letter to Mark O. Medford dated March 22, 1993, which transmitted the subject NOV. The violation is associated with excessive leakage from the Unit 1 upper containment personnel airlock outer housing. The cause of the leakage was improper installation of a blind flange on the outer housing of the airlock.

The condition associated with this violation was previously reported in accordance with 10 CFR 50.73 by Licensee Event Report 50-327/93004 dated March 23, 1993. There are no new commitments associated with this response.

If you have any questions concerning this submittal, please telephone M. A. Cooper at (615) 843-8924.

Sincerely,

Robert A. Fenech

Robert A. Fenech

Enclosure
cc: See page 2

230058

JE01

cc (Enclosure):

Mr. D. E. LaBarge, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy-Daisy, Tennessee 37379-3624

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323-2711

ENCLOSURE

RESPONSE TO NRC INSPECTION REPORT
NOS. 50-327/93-05 AND 50-328/93-05
PAUL E. FREDRICKSON'S LETTER TO MARK O. MEDFORD
DATED MARCH 22, 1993

Violation 50-327, 328/93-05-03

"A. Technical Specification 3.6.1.1 requires, in part, that primary containment integrity be maintained in MODES 1, 2, 3, and 4.

Technical Specification 3.6.1.2.c requires, in part, that containment leakage rates shall be limited to a combined bypass leakage rate of less than or equal to 0.25 L_a (56.3 scfh) for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths to the auxiliary building when pressurized to P_a (12 psig). This requirement is applicable in MODES 1, 2, 3, and 4 (prior to increasing reactor coolant system temperature above 200 degrees F).

Additionally, Technical Specification 3.6.1.3.b requires, in part, that each containment air lock shall be operable with an overall air lock leakage rate of less than or equal to 0.05 L_a (11.25 scfh) at P_a (12 psig) in MODES 1,2,3, and 4.

Contrary to the above, on February 22, 1993 the licensee identified that a leak existed on a blind flange (approximately 52.6 scfh) located on the Unit 1 upper containment outer airlock bulkhead. This leak resulted in a loss of primary containment integrity during the periods of time when the inner containment airlock door was opened. The inner air lock door was determined to have been opened eight times for personnel access to/from containment coincident with the leakage at the blind flange from February 16, 1993 through the identification of the problem on February 22, 1993.

Due to the as-found total containment bypass leakage being approximately 59.7 scfh, the required containment bypass leakage limit of 56.3 scfh was exceeded during the periods of time when the inner containment airlock door was opened. The inner air lock door was determined to have been opened eight times for personnel access to/from containment coincident with the leakage at the blank flange from February 16, 1993 through the identification of the problem on February 22, 1993.

Due to the as-found airlock leakage of approximately 55.6 scfh, the allowable airlock leakage rate was exceeded resulting in inoperability of the airlock for the period of February 16 through February 22, 1993.

"This is a Severity Level IV problem (Supplement 1)."

Reason for the Violation

The cause of this condition was the improper installation of the subject blind flange. The outer O-ring apparently slipped out of the machined groove and overlapped a portion of the inner O-ring during the installation process. This overlapping of O-rings created an artificial seal that prevented leakage detection during the normal postmaintenance testing process. The performance of a new test that pressurized the blind flange from the back side was required to quantify the leakage. A contributing cause to this condition was that the industry-accepted methodology of testing blind flanges failed to detect the mispositioned O-ring since this testing does not pressurize both sides of the flange. The industry-accepted method of testing this type of flange is to pressurize from the front side to ensure that there is no leakage between the O-rings. However, by also pressurizing from the back side of the flange, testing would assure detection of an artificial seal.

Corrective Steps That Have Been Taken and the Results Achieved

Corrective actions were immediately taken upon discovery of the condition in order to quantify the leakage and correct the adverse condition. These actions included testing the blind flange to determine the amount of leakage, correcting the deficiency, and retesting the flange before declaring the airlock operable.

The individuals involved in this event have been counseled with regard to attention to detail in component installation.

Corrective Steps That Will be Taken to Avoid Further Violations

The surveillance instruction that tests the containment personnel airlocks will be revised to include testing of the back side of the subject blind flange.

Blind flanges with similar applications will be evaluated to determine whether alternate testing methods are appropriate.

Date When Full Compliance will be Achieved

TVA is in full compliance.