TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

September 7, 1982

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

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

As required by the Sequoyah Nuclear Plant unit 2, operating license condition 2.C.(15), TVA submitted procedures for implementation of a surveillance program on corrosion of carbon steel piping. Enclosed are the results of the flow verification test for the essential raw cooling water system that was performed in the spring of 1982.

The recommendations included in this report supersede commitments made previously in our response to OIE Bulletin 81-03. We believe the information obtained during performance of the flow verification testing is sufficient to support the recommendations contained in this report. The procedures for performing the flow verification testing were provided in my October 15, 1981 letter to you.

If you have any questions concerning this matter, please get in touch with J. E. Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 7th day of Sept. 1982.

Bryant M. Lowery
Notary Public

My Commission Expires 4/8/86

B021

Enclosure
cc: U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

ENCLOSURE

SEQUOYAH NUCLEAR PLANT

ERCW FLOW VERIFICATION TESTING

In accordance with our commitment to NRC, we have completed the Essential Raw Cooling Water (ERCW) Flow Verification Test (SI-566). The test was completed on April 23, 1982. The worst case conditions assumed are loss of downstream dam, loss of one train of the diesel generators and a continuous backwash of 1000 gpm of the ERCW train under test. This SI verifies flow for each train for the following conditions: (1) Unit 1 - LOCA, Unit 2 - Hot Standby; (2) Unit 1 - Hot Standby, Unit 2 - LOCA and (3) Unit 1 - Shutdown Unit 2 - Hot Standby.

Preparation for this test was quite extensive, requiring approximately a week to instal all test connections and simulate the required conditions. The following temporary alterations were required prior to commencing actual data taking and flow balancing:

1. 164 connections to various flow elements. Test connections and vents were made with polyflow and Swagelok quick connections to allow for flow and pressure readings throughout the test.

2. Nitrogen bottles were installed at five air conditioning units for each train to force the associated temperature control valves (TCV's) full open and allow full ERCW flow to the associated equipment.

3. An annubar flow element was installed for each train to allow monitoring of the required continuous backwash flow.

4. The automatic operation of the backwash and flushout valves for both trains was disabled during the test.

5. 42 FCV's were forced open to allow full ERCW flow through the associated components.

Preparation for the test (installation of quick connections, N^2 bottles, etc.) was begun February 27, 1982. It was decided to verify the positions of all valves listed on OSLA 100 (identifies the valve positions established during Pre Op Testing). During the verification several valve positions were found to be incorrect (see LER SQRO-50-327/82034). All other incorrect positions were evaluated as nonreportable. Problems were encountered with the transmitters for containment spray heat exchanger flow; removal of trapped air in the sensing lines corrected the problem.

The remainder of this report will discuss problems found during the various tests.

Train A, Test 1 (Unit 1 - LOCA, Unit 2 - Hot Standby)

March 5--When the Auxiliary Control Air Compressor A was lined up, it continually tripped. A solenoid valve was replaced (see LER SQRO-50-327/82035).

March 7--An abnormally high pressure differential was discovered on CSHX 1A. Subsequent visual inspection revealed approximately 15 gallons of clams clogging the inlet

nozzle of the heat exchanger (see SQRO-50-327/82027). After investigating this incident it was determined to be an isolated case of infestation because of inadequate distribution of chlorine prior to shutdown of the header; subsequently, allowing propagation of the clams in the nonflowing water. The remaining CSHXs were subsequently inspected and no clam problems were found.

March 10--No flow could be obtained through the Electric Board Room Cooler A. The TCV was discovered to be faulty. This was evaluated to be nonreportable.

The FCV for CSHX A (1-FCV-67-146) was discovered to be malfunctioning; when moved from the open position to the 50-percent position it did not move at all. When taken to the 50-percent position from the 35-percent position, there was inadequate flow for the worst case condition. However, the system was determined operable for the system conditions at that time. The valve limit switches were adjusted to correct the problem. This was evaluated to be nonreportable.

Train A, Test 2 (Unit 1 - Hot Standby, Unit 2 - LOCA)

No significant problems were encountered.

Train A, Test 3 (Unit 1 - Shutdown, Unit 2 - Hot Standby)

No significant problems were encountered.

Train B, Test 1 (Unit 1 - LOCA, Unit 2 - Hot standby)

March 26--Discovered CSHX 2B throttle valve (2-FCV-67-124) did not allow proper flow in its present position (see LER SQRO-50-328/82047); valve was adjusted for adequate flow.

Train B, Test 2 (Unit 1 - Hot Standby, Unit 2 - LOCA)

No significant problems were encountered.

Train B, Test 3 (Unit 1 - Shutdown, Unit 2 - Hot Standby)

No significant problems were encountered.

Summary

1. Flow blockage as a result of clams in CSHX 1A was determined to be an isolated case caused by an inadequate chlorination program the previous summer. An inspection of the remaining CSHXs provided no evidence of clams.

2. For various components, their respective throttle valves were found to not be in their proper OSLA 100 positions.

Recommendations (continued)

1. The chlorination program has been initiated at Sequoyah and will continue through the summer as long as the ERCW temperature requires. This will eliminate the possibility of clam larvae surviving in the ERCW system.

2. To verify that heat exchanger blockage does not occur, a heat exchanger inspection program will be instituted.

3. A valve inspection program that will verify the OSLA-100 throttle valve positions will be instituted. This valve verification will be performed at least quarterly.

4. To verify that the above-mentioned programs adequately take care of their associated problems and to check for flow degradation because of piping corrosion, SI-566 should be performed again starting by March 1, 1983. Following a review of the SI results, it will be determined if the SI needs to be performed again.

RRG:MJS
7/9/82