

ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2

REDUCED STEAM FLOW AT LOW REACTOR
COOLANT SYSTEM LEVELS

NCR 1011

SECOND INTERIM REPORT

Interim Progress

TVA and Westinghouse have completed the installation of the modified orifice design. Procedures for conducting retest of the accumulators are presently being reviewed and approved.

Retest of the accumulators should be completed by late February.

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

830 Power Building

OCT 17 1978

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

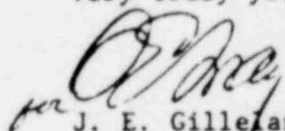
Dear Mr. O'Reilly:

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - REDUCED SIS FLOW AT LOW
REACTOR COOLANT SYSTEM LEVELS - NCR 1011 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
J. K. Rausch on September 18, 1978. Enclosed is our first interim
report. We will transmit our next report to your office by December 15,
1978.

If you have any questions concerning this matter, please get in touch
with M. R. Wisenburg at FTS 854-2581.

Very truly yours,



J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Mr. John G. Davis, Acting Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ATLANTA, GEORGIA
OCT 17 1978

ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 REDUCED SIS FLOW AT LOW REACTOR COOLANT SYSTEM LEVELS - NCR 1011

FIRST INTERIM REPORT

Description of Deficiency

Blowdown testing of the Safety Injection System accumulators at Sequoyah revealed an injection piping flow resistance (f L/D factor), as calculated from the test results, that varies with backpressure at the injection points to the reactor coolant system. The variation is apparently due to the backpressure effect on cavitation occurring downstream of the injection line orifice. Reduced backpressures (caused by low reactor coolant pressures) result in cavitation which reduces the expected injection flow rates. The flow may be reduced enough to invalidate injection water assumptions made in the LOCA analysis by Westinghouse. Because of the similarity of the Watts Bar design to the Sequoyah design, this deficiency also affects the Watts Bar Nuclear Plant.

Corrective Action

Westinghouse has proposed a modified orifice design which includes a new orifice at the accumulator nozzle. This new design should eliminate the cavitation and its effects on the injection line flow resistance. Subsequent tests will verify the adequacy of the action.