

PART 21 IDENTIFICATION NO. 80-313-000 COMPANY NAME Valley Authority

DATE OF LETTER 11/26/80 DOCKET NO. 50-328

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PDR

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ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOWUP AS SHOWN BELOW:

IE ☒

NRR ☐

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OTHER ☐

~~RCI~~
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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

80-312-000

400 Chestnut Street Tower II

November 26, 1980

50-328

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 UNIT 2 - BROKEN SPRING IN PRESSURIZER SAFETY VALVE -
NCR 2397 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
R. W. Wright on October 29, 1980, in accordance with 10 CFR 50.55(e).
Enclosed is our final report. We consider 10 CFR Part 21 to be applic-
able to this deficiency.

If you have any questions, please get in touch with D. L. Lambert at
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNIT 2
BROKEN SPRING IN PRESSURIZER SAFETY VALVE
NCR 2397
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

A test was performed on unit 2 pressurizer safety valve (2-RV-68-565) before installation. During the test, relief pressure appeared very erratic. The valve was disassembled and a broken spring was discovered. The valve (and its spring) was supplied by Crosby Valve and Gage Company.

Safety Implications

Had the broken spring escaped detection, the pressurizer safety valve could not have functioned properly. The valve was designed to fail in the closed position. The valve spring's failure could have resulted in a blowdown of the RCS. Although this occurrence is within the design basis event parameters, the integrity of the pressurizer must be maintained in order for the plant to operate safely.

Corrective Action

The broken spring was taken out of the valve and replaced with one supplied by Crosby Valve and Gage Company. The broken spring was inspected; the failure was apparently caused by quench cracks in the spring material.

There is every indication that the broken spring was an occurrence of low probability. Crosby asserts that 300 nuclear and hundreds of thousands of nonnuclear valve springs (in noncorrosive environments) have no other reported history of failure. A TVA-sponsored Licensing Information Service search revealed only one failure in a 3/4-inch Crosby relief valve. There were no known spring failures. Six domestic PWR's have a total of 33 Crosby relief valves which were bought in the same lot as Sequoyah; none of these has experienced spring failure or displayed quench cracking. Unit 2 valve springs are being inspected and preliminary results indicate no aberrations.

The mishandling of the metallurgical process which formed the faulty spring could recur; however, examination and testing procedures have proven sufficient to reveal a deficiency of this nature.

TVA will continue to monitor and test valves in the preoperational phase of construction at Sequoyah Nuclear Plant (SNP) unit 2. As in this case, any defective or unsatisfactory valves or components will be documented and dealt with as such.

TVA expects to complete inspection and preoperational testing of all similar valve springs at Sequoyah unit 2 by March 1, 1981.