

File



TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

March 17, 1975

Mr. Donald F. Knuth, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Knuth:

BROWNS FERRY NUCLEAR PLANT UNITS 2 AND 3 - POTENTIAL
DESIGN DEFICIENCY IN VALVE YOKE TO MOTOR MOUNT WELD

Initial report of the subject potential deficiency was made on May 14, 1974, and was followed by our June 14, July 15, August 12, September 13, 1974, January 15, 1975, and our March 3, 1975, letters, J. E. Gilleland to Donald F. Knuth. Because the yoke to motor base welds of FCV-74-58 in unit 1 failed, similar valves (FCV's 74-58 and 74-72) in units 2 and 3 may be subject to the same type of failure.

The enclosed seventh interim report discusses a vibration problem which we believe is the cause of this and perhaps certain other related problems at Browns Ferry Nuclear Plant. It also provides you with additional information which we have to date and the schedule for further testing and for submittal of a draft of the final report.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure

CC (Enclosure):

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, NW.
Atlanta, Georgia 30303

8308290112 761122
PDR ADDOCK 03000260
S PDR

50-259,260

50197

ENCLOSURE

BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3

FAILURE OF THE WELD BETWEEN THE YOKE AND MOTOR MOUNTING PLATE FOR
FLOW CONTROL VALVES (FCV'S) 74-58 AND 74-72
DDN NO. 191

SEVENTH INTERIM REPORT

On May 14, 1974, an initial report regarding the subject deficiency was made by telecon to W. S. Little, AEC-DRO Inspector, Region II. The report was made by L. D. Weber and J. A. Raulston in compliance with paragraph 50.55(e) of 10CFR50. There have been six interim reports previous to this report. These were dated June 14, 1974, July 15, 1974, August 12, 1974, September 13, 1974, January 15, 1975, and March 3, 1975.

In our sixth interim report concerning the failure of the weld between the yoke and motor mounting plate and a torus spray valve (74-58) in the RHR system, we mentioned a Southwest Research Institute (SWRI) technical report that is to be submitted in the near future. This report will discuss a vibration problem which we believe is the cause of this and perhaps certain other related problems at Browns Ferry. This letter is to inform you of additional information we have to date and to provide the schedule for further testing and for a draft of the final report.

The initial indication of possible vibrational problems in Browns Ferry Unit 1 was the failure of Limitorque mounting bolts on operators of two RHR valves (74-72 and 74-58). The AEC was informed of this by DDN 144 on June 30, 1973. The failure originally was attributed to the increased weight of replacement operators on those valves. A second failure in Unit 1 occurred on June 12, 1974, when the weld between the yoke and the motor mounting plate failed on valve 74-58. This was reported by Abnormal Occurrence BFAO-50-259/7428W and was followed by DDN 191 on May 14, 1974. At that time TVA considered that these failures might be caused by pipe vibrations.

TVA retained the services of Southwest Research Institute to perform tests to locate the source of these vibrations. We have recently received the results of SWRI's initial tests, and we now believe that several other Abnormal Occurrences may be attributed to pipe vibrations. The initial SWRI tests were conducted in November and December 1974, and TVA now plans for additional tests and a draft of the final report to be completed by the end of April. SWRI has indicated that they believe the vibrations in the RHR system are being caused by an excessive pressure drop across the flow control valve near the discharge into the suppression chamber. The low downstream pressure condition is also a contributing factor. At the present time TVA is planning to modify Unit 3 to test various possible solutions proposed by SWRI. In the meantime, certain attachments to Units 1 and 2 have been temporarily modified by the addition of stiffeners so that the vibrations will not endanger the safe operation of these units until a permanent solution can be obtained.

When tests on Unit 3 are completed and we have received, reviewed, and approved the final report from SWRI, TVA will forward the report to the NRC. TVA plans to reference this report in support of DDN 191 and in the future when describing any permanent modification to the plant that might be recommended by this study.