

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

APR 8 9:35
April 3, 1986

WBRD-50-391/86-33

U.S. Nuclear Regulatory Commission
Region II
Attention: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNIT 2 - SUPPORT OVERSPAN ON 1/2-INCH SCHEDULE 40
STAINLESS STEEL PIPING WITH CONCENTRATED WEIGHTS LESS THAN 25 POUNDS -
WBRD-50-391/86-33 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
Bob Carroll on March 7, 1986 in accordance with 10 CFR 50.55(e) as SCR WBN
6500-S. Enclosed is our final report.

If there are any questions, please get in touch with R. H. Shell at
FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. L. Gridley
by *RL*
R. L. Gridley
Manager of Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

8604170608 860403
PDR ADDCK 05000391
S PDR

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 2 SUPPORT OVERSPAN ON 1/2-INCH SCHEDULE 40 STAINLESS STEEL PIPING WITH CONCENTRATED WEIGHTS LESS THAN 25 POUNDS

WBRD-50-391/86-33

SCR WBN 6560-S

10 CFR 50.55(e)

FINAL REPORT

Description of Deficiency

TVA's typical hanger drawing 47A054 series, for the essential control air system did not provide the criteria for one-half inch (1/2-inch) schedule 40 stainless steel (SS) piping with concentrated weights less than 25 pounds. Consequently, 1/2-inch schedule 40 SS piping with concentrated weights under 25 pounds was installed without the consideration of reduced span data. This type of piping is only installed in the essential control air system, and it has been determined that this problem does not affect WBN unit 1. The apparent cause of this deficiency is a misunderstanding between the design and construction organizations on the interpretation of information on the design drawings. The design organization's intent was to use the reduced span data for all concentrated weights including those less than 25 pounds. However, the construction organization interpreted the information to mean that concentrated weights less than 25 pounds were not to be considered.

Safety Implications

Piping which was installed without compensation for concentrated weights could result in a reduced factor of safety for the adjacent supports or excessive deflection in the lines. Under design basis accident conditions, support failure or line rupture could occur, consequently affecting the ability of essential safety-related equipment to perform its intended design functions. As such, this condition could adversely affect the safe operations of the plant.

Corrective Action

TVA has determined that eleven spans of this type of piping were affected by this condition. Each case was reviewed by design and determined to be acceptable with the exception of one overstressed span located between supports 2-032-GS-004 and 2-032-AB-001. The air line on which this span is located operates valve 2-PCV-1-30, the main steam header pressure relief control valve to steam generator No. 4.

TVA will revise the applicable hanger drawings to include maximum span data for the 1/2-inch stainless steel piping with concentrated weights of less than 25 pounds. Drawings will be issued under engineering change notice (ECN) 6047. The unacceptable line indicated above will be reworked to reduce the span. All affected lines will be inspected to the new design requirements and documented per QCP 3.11.1. Modifications and inspections will be completed before fuel load.

In order to prevent recurrence, the revision to the design drawing series 47A054, will clarify the applicability of design requirements for reduced piping spans with concentrated weights less than 25 pounds. These requirements will control any future work and inspections of this type.