

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
5N 157B Lookout Place

APR 30 1987

WBRD-50-390/86-66
WBRD-50-391/86-60

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - QUESTIONABLE WELD RADIOGRAPHS
PREVIOUSLY ACCEPTED - WBRD-50-390/86-66, WBRD-50-391/86-60 - THIRD INTERIM
REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Gordon Hunegs on November 26, 1986, in accordance with 10 CFR 50.55(e) as SCRs WBN NEB 8651 and WBN NEB 8665. Interim reports were submitted on January 14 and February 18, 1987. Enclosed is our third interim report. We expect to submit our final report on or about December 15, 1987.

If there are any questions, please call R. D. Schulz at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Somu
for R. Gridley, Director
Nuclear Safety and Licensing

Enclosure
cc: see page 2

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U.S. Regulatory Commission

cc (Enclosure):

Mr. Gary G. Zech, Director
Regional Inspection
Division of TVA Projects
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

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

U.S. Nuclear Regulatory Commission
Watts Bar Resident Inspector
P.O. Box 700
Spring City, Tennessee 37381

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
QUESTIONABLE WELD RADIOGRAPHS PREVIOUSLY ACCEPTED
WBRD-50-390/86-66, WBRD-50-391/86-60
SCRs WBN NEB 8651 AND WBN NEB 8665
10 CFR 50.55(e)
THIRD INTERIM REPORT

Description of Deficiency

The DOE/EG&G weld reinspection program, in response to employee concerns at Watts Bar Nuclear Plant (WBN), included the review of radiographs of ASME section III piping which were made during the construction period. Approximately 400 previously accepted radiographs, representing 86 welds, were reevaluated. The review identified indications in two welds that did not meet ASME Section III requirements. Further investigation of these 400 radiographs by TVA, which included additional radiography, identified one additional unacceptable indication. The radiograph review population was subsequently expanded to 100 percent. The expanded review involved approximately 3,100 welds. EG&G rejected an estimated 500 radiographs, representing approximately 350 welds. Of these, approximately 250 welds have potentially rejectable indications. The remainder were rejected because of radiographic technique discrepancies. (This includes 58 socket welds which were radiographed at the request of Westinghouse.) These reviews represent radiographic interpretations associated with unit 1.

This deficiency is attributed to a lack of attention to detail by inspectors when interpreting radiographs. Also, there was insufficient management oversight and quality assurance (QA) surveillance of the work of radiographic interpreters. TVA considers that the oversight and surveillance problems, in conjunction with the high deficiency rate in the interpretation of weld radiographs, represent a significant breakdown in a portion of the QA program.

Unit 2 radiographs were interpreted under the same program and are addressed in SCR WBN NEB 8665.

Safety Implications

Welds that do not meet ASME section III requirements (due to unacceptable indications) may not be suitable for service. Postulated failure of the welds could result in a loss of pressure boundary integrity of the affected safety-related system(s) and in a failure of the safety-related system(s) to perform the required design function, creating a condition which could be adverse to the safe operation of the plant.

INTERIM PROGRESS

The unit 1 radiographs have been reviewed by Level II inspectors and are presently being independently reinterpreted by Level III inspectors. This effort is approximately 25 percent complete.

Unit 2 radiographs will undergo independent reviews by both Level II and Level III inspectors after completion of the unit 1 effort.

The unit 1 and unit 2 radiographs having indications which may not meet ASME Section III requirements will be reviewed. The indications which deviate from ASME Section III requirements will be evaluated and corrective actions developed as required. Special Engineering Procedure (SEP) 87-02, which will govern this process, has been drafted and is currently in the review cycle. The basis for any acceptance of deviations from ASME section III will be submitted for NRC staff review and approval.

To prevent recurrence of this deficiency, 100 percent of the radiographs for all new ASME section III piping welds will be evaluated by both a Level II and a Level III inspector. The affected site procedures have been strengthened by including lessons learned for documenting all indications and requiring the Level II and Level III inspection reviews. Training has been completed for quality control (QC) radiographic interpreters to encompass the lessons learned. Radiography will be included within the scope of all future corporate nondestructive examination (NDE) audits. The QA surveillance group will include radiography as part of its surveillance schedule. To improve management oversight, the number of personnel authorized to review radiographs has been limited.

Further root cause investigation is underway, and identified causes will be evaluated to ensure that proper corrective actions are taken and that the scope of the problem is identified.

TVA will provide the final report on this deficiency to NRC on or about December 15, 1987.