

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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SEP 14 1988

WBRD-50-390/87-05
WBRD-50-391/87-05

10 CFR 50.55(e)

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

Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority)

Docket Nos. 50-390
50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - USE-AS-IS AND REPAIR
DISPOSITIONS FOR CONSTRUCTION NONCONFORMANCE REPORTS - WBRD-50-390/87-05
AND WBRD-50-391/87-05 - FINAL REPORT

The subject deficiency was initially reported to NRC Region II Inspector Gordon Hunegs on January 12, 1987, in accordance with 10 CFR 50.55(e) as a potentially reportable item, SCR WBN WBP 8601. Our first and second interim reports were submitted on February 11, 1987 and February 29, 1988, respectively. Enclosed is our final report. This report contains no new commitments.

If there are any questions, please telephone G. R. Ashley at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley
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Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

SEP 14 1988

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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2
"USE-AS-IS" AND "REPAIR" DISPOSITIONS FOR CONSTRUCTION
NONCONFORMANCE REPORTS
WBRD-50-390/87-05 AND WBRD-50-391/87-05
SCR WBN WBP 8601
10 CFR 50.55(e)

FINAL REPORT

Description of Deficiency

Nuclear Engineering (NE) Engineering Assurance (EA) conducted an audit of Watts Bar Engineering Project (WBEP) activities related to the handling of construction nonconformance reports (NCRs). The audit evaluated the WBEP activities related to the disposition, documentation, and control of construction NCRs, with special emphasis placed on NCRs with "use-as-is" or "repair" dispositions to ensure that these dispositions were adequately justified and design safety margins were not compromised.

The audit identified one deficiency (No. 86-27-01) that contained four concerns:

1. "Use-as-is"- and "repair"-dispositioned NCRs are not tracked against the affected document. Therefore, in most cases for NCRs designated as not requiring a drawing change, there is no retrievable, consolidated record of the accepted variations from the drawing or original design. The cumulative effect of the design on the margin of safety is indeterminate. Also, very little evidence could be found to indicate that these NCRs have received the same level of independent design verification and interdiscipline reviews as the original design.
2. "Use-as-is"-dispositioned NCRs that come under the ASME code that are designated as not requiring a drawing change also do not meet ASME code requirements, since the NCR cannot be readily linked to the drawing to indicate as-constructed configuration. NCRs dispositioned as requiring a drawing change did not exhibit these problems since the drawing, NCR, and engineering change notice (ECN) are all cross-referenced.
3. Many "use-as-is"-dispositioned NCRs either do not have any justification or lack adequate justification detail, such as references to supporting documents or analysis, making it difficult or impossible to trace the justification without recourse to someone familiar with the condition described.
4. There does not appear to be any project procedural guidance for the handling of NCRs. It is recognized that division guidance is also lacking, and this has been referred to the EA procedures group for resolution. The project, however, must have some interim and detailed implementing guidance to ensure NCRs are adequately and consistently handled.

This condition applies to WBN conditions adverse to quality (CAQs) initiated by Nuclear Construction (NC), the Site Director's Office (SDO), and vendors that were dispositioned "use-as-is" or "repair." The NE-initiated CAQs that were dispositioned "use-as-is" are potentially deficient as well, because there were inadequate procedural guidelines for documentation of "use-as-is" dispositions for NE-initiated CAQs.

The cause of this deficiency is attributable to the fact that requirements for documenting engineering's final disposition of "use-as-is" or "repair" for CAQs were not specified in a project procedure or in a division level procedure. The level of documentation for the technical evaluation, review, approval, and the configuration resulting from CAQs approved by engineering as "use-as-is" or "repair" did not meet all requirements of American National Standards Institute (ANSI) N45.2-1971, as committed in TVA's Quality Assurance Topical Report.

Safety Implications

TVA could not demonstrate that the margin of safety has not been compromised at WBN because there is inadequate documentation of the as-built condition resulting from "use-as-is" and "repair" dispositions. This condition could have allowed the design margin of safety to be adversely affected because of the cumulative effect of past dispositions which had not been documented and were not available for consideration in reviewing later design changes. Until such time as the cumulative effect of past dispositions can be evaluated, the affect of this condition on plant safety is indeterminate. This condition therefore could have potentially jeopardized the safe operation of the plant had it remained uncorrected.

Corrective Action

TVA's corrective action plan includes the following actions:

- A. Identify the WBN CAQs that had a final disposition of either "use-as-is" or "repair."
- B. For the CAQs identified in step A, identify those that had no design drawings or documents issued as a result of the final disposition being "use-as-is" or "repair."
- C. For the CAQs identified in step B, identify the applicable design documents, if any, that contain the design requirements that were not met as described by the CAQ.
- D. For each design document identified in step C, perform a technical review of the latest revision of the document and consider what effect the condition described by the CAQ has on the document. Either prepare or revise a calculation, if required, to technically justify the current revision of the document and indicate what cumulative effect, if any, that the CAQ or CAQs have on the document as to technical adequacy, design

margin, conformance to criteria, and Final Safety Analysis Report (FSAR) commitments. Process the document by existing design change control requirements to reflect the as-constructed configuration represented by the CAQ.

- E. Issue a matrix drawing that cross-references the CAQs identified in step B and the affected documents that were revised to incorporate the CAQs.
- F. Issue a memorandum from the WBEP project engineer to the NC-WBN project manager and WBN site director, with the matrix drawing attached, with instructions to file the memorandum and matrix drawing with each CAQ listed on the matrix drawing.

This effort has progressed as follows: The initial CAQ screening portion of the corrective action program is complete. A total of 9,132 CAQs have been screened for disposition determination. Of that number, 2,753 CAQs were dispositioned either "use-as-is" or "repair." This included 2,062 for unit 1 and common, and 691 for unit 2. These numbers have changed since our last interim report as a result of the elimination of NCRs invalidated before issuance, redundant revisions of the same NCR, and NCRs which were dispositioned by engineering after recurrence controls were in effect. Of the unit 1 and common CAQs, design output documents will need to be revised to reflect the "use-as-is" or "repair" disposition of 479 CAQs. Further evaluation is required to determine if design output document revisions will be required for an additional 478 unit 1 and common CAQs. Approximately 53 percent (1,105) of the unit 1 and common CAQs resulted in no new design output document revision. This number could increase following further evaluation of the 478.

In order to prevent recurrence, WBEP-EP 43.23 was issued to establish the requirements for handling CAQs that are either initiated within NE or sent to WBEP for disposition by organizations outside NE. The procedure has been superseded by WBEP 3.05. A specific requirement is included to ensure that appropriate design documents reflect the approved configuration for any "repair" or "accept-as-is" dispositions. WBEP 3.05 also requires the basis for approval of "repair" or "accept-as-is" dispositions to be documented along with the disposition on the CAQ report. Training in these procedures has been given to WBEP managers responsible for handling CAQs.

All corrective actions to resolve this SCR will be completed before fuel load for each unit.