

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ICE CONDENSER STRUCTURE
BOLTS OVERTORQUED
NCR 1226R

FINAL REPORT

Description of Deficiency

During installation of the ice condenser structure, TVA requested Westinghouse to verify the adequacy of the torquing values used to bolt the ice condenser crane wall columns together. The request was a result of difficulties encountered during bolting operations not related to the columns. Westinghouse investigated the request and concluded that the torque values used in construction of the columns may exceed the yield strength of threaded material used in the bolting. Therefore, although no actual failures were experienced, a possibility of overtightening could exist on these bolts. Overtightening of the bolts could lead to thread stripping and could degrade the capability of the columns to perform as designed.

Safety Implications

If the deficiency had gone uncorrected, the possibility exists that a non-rigid joint could be present at a column splice where a rigid joint is required. If a non-rigid joint was present, the column may not have been able to withstand all its design loadings. The deficiency is such that several column splices could be affected. Since these columns are used for support of the ice condenser lattice, column failure could consequently result in lattice failure. This could seriously impair the ability of the ice condenser to provide the cooling capability necessary to mitigate the consequences of an accident. This could jeopardize the safe operation of the plant.

Corrective Action

For all affected bolts in Watts Bar, TVA removed them and then drilled the thread out completely. A longer bolt was then used with a nut. This action will eliminate the possibility of weakened threads due to overtightening. Westinghouse has also supplied TVA with corrected tensile loadings from which TVA calculated revised values for the rebolting. Westinghouse has performed tests and analysis and have demonstrated a similar situation does not exist at the Sequoyah Nuclear Plant.

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

830 Power Building

OCT 30 1978

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, WATTS BAR, HARTSVILLE, PHIPPS BEND, AND YELLOW CREEK
NUCLEAR PLANTS - REPORTABLE CONDITION RELATED TO OEDC QA AUDIT
M77-7 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
R. W. Wright on January 6, 1978. We submitted interim reports
on February 6, July 3, and August 28, 1978. Enclosed is our
final report.

If you have any questions concerning this matter, please get in
touch with M. R. Wisenburg at FTS 854-2581.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Mr. John G. Davis, Acting Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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