

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

830 Power Building

December 9, 1977

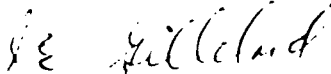
Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 1217
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 2 - REPORTABLE DEFICIENCY - BROADLINE
CORPORATION POLAR CRANE ASSEMBLY - REJECTABLE WELDS (NCR 938R)

The subject deficiency was initially reported to NRC-OIE Project
Section Branch Chief J. C. Bryant on October 3, 1977. Our first
interim report was submitted on November 2, 1977. Enclosed is
our final report on this deficiency.

Very truly yours,



J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Dr. Ernst Volgenau, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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WATTS BAR NUCLEAR PLANT
UNIT 2
BROADLINE CORPORATION POLAR CRANE ASSEMBLY
REJECTABLE WELDS
NCR 938R

Description of Deficiency

During the assembly of unit 2 polar crane bridge, the bolt holes for one of the two end ties would not line up. Site personnel contacted the Division of Engineering Design (EN DES) and it was decided to cut out weld Nos. 1 and 4, align the members with bolt holes, and reweld.

When these welds were cut out, slag inclusions and lack of fusion were discovered. The remaining six welds were examined using UT. Four of these six were rejectable, and NCR 938R was issued.

Safety Implication Statement

If the nonconformance had gone uncorrected, it is possible that during a postulated seismic event, the unit 2 polar crane bridge assembly could have failed, possibly allowing the crane to fall onto the operating deck of the unit 2 reactor. The polar crane bridge assembly would have performed satisfactorily under normal conditions. The assembly would have been inadequate only under extreme seismic condition.

If the polar crane were to fall onto the operating deck, the resulting damage to the reactor coolant system or reactor control system may have impaired the ability of the plant to reach and maintain a safe shutdown condition. If the bridge assembly had failed under seismic conditions during a refueling outage, the polar crane could have fallen on the open vessel and damaged the reactor fuel and/or the reactor vessel. Damage of this magnitude has the potential for a condition adverse to safe operation of the plant.

Corrective Action

Documentation of repair for welds Nos. 1 and 4 was made on NCR 9378. The crane bridge was then assembled, and the two welds which had been cut out were rewelded, UT examined, and found acceptable.

Following repair of welds Nos. 1 and 4 the crane bridge with the 600-ton rated construction hoist was load tested successfully at 439 tons and used to set the steam generators and the reactor pressure vessel.

Because of the configuration of the end tie assembly, a portion of the defective welds could not be repaired in a manner compatible with the welding originally performed during shop fabrication. A special weld repair procedure was written by site employees and approved by EN DES.

The four deficient welds were repaired and MT examined satisfactorily and the hoist furnished by Broadline was installed after removal of the special construction hoist. Preoperational and acceptance testing of the unit 2 crane has been satisfactorily completed.

The unit 1 polar crane end tie welds will also be UT examined and the corrective action for any deficient welds which might result from this examination will be the same as addressed above for unit 2.