

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

March 27, 1981



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:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - INADEQUATE DOCUMENTATION FOR
MISCELLANEOUS MECHANICAL EQUIPMENT - NCR WB-G-80-05 - FINAL REPORT

The subject condition was initially reported to NRC-OIE Inspector
M. Thomas on April 8, 1980, in accordance with 10 CFR 50.55(e). Interim
reports were submitted on May 7, July 15, October 10, and December 12,
1980. Enclosed is our final report.

If you have any questions, please get in touch with D. L. Lambert at
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Bo19
S
1/1

8104060662

ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
INADEQUATE DOCUMENTATION FOR MISCELLANEOUS MECHANICAL EQUIPMENT
NCR WB-G-80-05
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

During an audit at Watts Bar Nuclear Plant (WBN) conducted by TVA's Construction Quality Assurance personnel, it was found that certain activities affecting quality were performed without adequate documentation. Specifically, the installation, testing, and documentation requirements for certain miscellaneous mechanical equipment listed in N3G-881, "Identification of Structures, Systems, and Components Covered by the Watts Bar Nuclear Plant Quality Assurance Program," were not adequately addressed in site Quality Control Procedures. These items are:

1. Fuel Conveyor System and Controls
2. Pressure Confining Doors
3. Watertight Doors and Seals
4. RHR Sump Manways and Seals
5. Personnel Access Doors and Seals
6. Auxiliary Building R/R Access Hatches and Seals
7. Equipment Access Doors and Seals
8. Shield Doors and Enclosure
9. Escape Hatch and Seals
10. R/R Access Door
11. Spent Fuel Pit Bridge Crane
12. Manipulator Crane
13. New Fuel Storage Racks

The above list addresses all items included in WB-G-80-05 except ERCW personnel access doors and seals and missile barriers for A/C enclosure. There are no components at WBN with these nomenclatures.

The causes of this deficiency are detailed below:

N3G-881 lists Conveyor System and Controls rather than Fuel Conveyor System and Controls. This resulted in this item being overlooked initially since N3G-881 was intended to include the Fuel Conveyor System.

QCP-4.18, "Erection and Inspection of QA Cranes," initially governed the reactor building polar crane and the auxiliary building 175-ton cranes only and omitted requirements for the installation of the spent fuel pit bridge crane and manipulator crane as well as requirements for testing in general.

All items listed except Nos. 1, 11, and 12 were initially installed using QCP-1.14, "Production Lot Acceptance Tests of Expansion Type Bolt Anchors," and QCP-2.4, "Fabrication, Erection, and Inspection of Structural and Miscellaneous Steel." Also, Westinghouse procedure F-8 was utilized for item 13. While addressing activities performed in the installation of these features, these procedures did not specifically control the overall program to install and test this equipment.

There was some confusion as to the interpretation of N3G-881. This document does not refer to drawing numbers to identify features listed. As noted above, two of the items listed do not exist. N3G-881, Revision 1, dated March 16, 1978, states in Section 4.0, "... It must be realized that any detailed listing of items within the WBN QA Program is, of necessity, incomplete and requires periodic revision to assure current information. These items are provided for convenience and are not intended for use as a complete scoping document for the WBN QA Program."

Safety Implications

The equipment affected by this deficiency is not required during plant operation or to mitigate the consequences of an accident. However, the equipment is used to handle and store nuclear fuel and to provide protective seals and barriers. Because this equipment had not been installed and inspected per QA requirements, TVA did not have sufficient assurance that the equipment would perform its intended function. Failure of some portion of the fuel handling or storage equipment or the failure of seals on doors and enclosures could have led to radiation doses in excess of the maximum allowable limits.

Corrective Actions

Site quality control procedures have been reviewed together with N3G-881 to ensure adequate coverage of "miscellaneous mechanical equipment." Quality control procedures have been revised or rewritten to specify inspection and documentation requirements as follows.

- QCP-4.25, "Installation of Fuel Transfer System," was issued on June 10, 1980. This procedure covers item 1 above.
- QCP-2.18, "Inspection of Mechanical Doors, Hatches, and Manways," was issued on July 16, 1980. This procedure covers items 2, 3, 4, 5, 6, 7, 8, 9, and 10 above.
- QCP-4.18, "Erection and Inspection of QA Cranes," was revised on July 30, 1980, to include the installation of items 11 and 12.
- QCP-4.26, "Testing of Cranes, Hoists, and Monorails," was issued on August 1, 1980. This procedure governs the testing of items 11 and 12.
- QCP-2.19, "Installation and Inspection of New Fuel Storage Racks," was issued on October 14, 1980. This procedure applies to item 13 above.

Activities performed before the above dates have been reinspected and documented per the requirements of the applicable procedures.

The procedures listed under "Corrective Action" will control the installation, testing, and documentation of miscellaneous mechanical equipment which occurs after the issue dates listed.