



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

MAR 20 1991

WBRD-50-390/91-03

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) Docket No. 50-390
Tennessee Valley Authority)

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - ADVERSE TREND OF FOREIGN MATERIAL
IN PLANT SYSTEMS - WBRD-50-390/91-03 - INTERIM REPORT

The subject deficiency was initially reported to NRC Region II on February 15, 1991, in accordance with 10 CFR 50.55(e) as Condition Adverse to Quality Report WBP 910145 Revision 0. Enclosed is TVA's interim report. TVA will submit a final report by October 3, 1991. The delay in submitting this report was discussed with Region II staff on March 19, 1991.

If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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Enclosures

cc: See page 2

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ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1
ADVERSE TREND OF FOREIGN MATERIAL IN PLANT SYSTEMS
WBRD-50-390/91-03
CAQR WBP 910145
10 CFR 50.55(e) INTERIM REPORT

DESCRIPTION OF DEFICIENCY

As a result of an incident investigation concerning foreign material entry into the Residual Heat Removal System (RHR)(System 74), TVA determined the internal cleanliness of plant systems is not always being properly maintained. On January 7, 1991, during preparation for a primary system flush for the RHR System, a large mirror and a significant amount of other debris were discovered in the suction piping to the RHR 1A-A pump. The investigation into this incident revealed an adverse trend of foreign material existing in plant systems. Examples of such debris had been documented in previous corrective action documents including maintenance requests (MRs) and condition adverse to quality (CAQ) reports. Several recently issued CAQ documents concerning foreign material in plant systems include WBP 910019, WBP 900383, WBQ 900167, and WBP 910061 which relate to foreign material in Systems 31 (Heating, Ventilation, and Air Conditioning), 67 (Essential Raw Cooling Water [ERCW]), 70 (Component Cooling System), and System 74.

Generally, a preoperational test or construction completion program would include sufficient cleaning and flushing activities to ensure systems are in the required state of cleanliness prior to operation. At WBN these activities were performed as part of construction completions. The WBN Prestart Test Program specifically excludes such activities because plant systems are either in use, in layup, or subject to specific cleaning and flushing controls required during modification and maintenance work. It is these latter controls which are implicated by the subject deficiency.

The causes of this deficiency are: (1) ambiguity regarding required cleanliness controls coupled with the failure of management to clearly define expectations for cleanliness controls; and (2) unclear procedural requirements.

The deficiency is not applicable to Unit 2 since initial cleanliness verifications for Unit 2 must still be performed.

SAFETY IMPLICATIONS

The extent of this deficiency is indeterminate but could apply to all safety-related systems. The deficiency would have had minimal consequences for the systems TVA has committed to flush prior to operation. These systems include those directly interacting with the Reactor Coolant System.

However, the presence of foreign material in safety-related systems and the failure to detect such material prior to plant operation could result in the failure of safety-related equipment to perform its design function, and thus, adversely affect safe plant operation.

CORRECTIVE ACTION

The foreign material discovered in specific systems was (or will be) removed under the corrective action for individual CAQs documenting the condition.

TVA will assess the extent of the subject deficiency as it relates to the systems covered under WBN's Prestart Test Program to determine which systems require cleaning/flushing or other actions necessary to ensure the systems are clean prior to plant operation. Criteria are being developed to determine which systems require inspection and to define the inspection attributes. The decision to require further cleaning/flushing or other corrective action will be based on the inspection results. Currently, 19 of 28 inspections have been completed for the ERCW system revealing minimal amounts of foreign material.

To address the management/procedural inadequacies, affected site procedures will be revised to clearly define management's expectation concerning internal system cleanliness, cleanliness controls, inprocess foreign material exclusion controls, and verification requirements for cleanliness.

Additionally a one-time training package(s) will be prepared and/or revised to address the procedural requirements and management expectations discussed above. The training will be required for plant and construction personnel who plan MRs or write workplans which could affect system cleanliness, for Quality Control inspection personnel involved in cleanliness inspections, and for craft foremen and craft personnel as directed by their supervision.

TVA expects to submit a final report for this deficiency by October 3, 1991. This report will include the results of the assessment and a summary of required corrective actions.

ENCLOSURE 2

LIST OF COMMITMENTS

1. TVA will assess the extent of the subject deficiency as it relates to the systems covered under Watts Bar Nuclear Plant's Prestart Test Program. This will include a determination of which systems require cleaning/flushing or other actions necessary to ensure the systems are clean prior to plant operation.
2. Affected site procedures will be revised to clearly define management's expectation concerning internal system cleanliness, cleanliness controls, inprocess foreign material exclusion controls, and verification requirements for cleanliness.
3. A one-time training package(s) will be developed and/or revised to address the revised procedural requirements and management expectations for cleanliness controls.
4. TVA will submit a final report by October 3, 1991.