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U.S. Nuclear Regulatory Commission
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10 CFR 2.201

Gentlemen:

In the Matter of)
Tennessee Valley Authority) Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - NRC INSPECTION
REPORT NO. 50-390, 391/97-11 - REPLY TO NOTICE OF VIOLATION
(NOV)

This letter provides WBN's reply to the NOV which is documented in the subject inspection report dated January 21, 1998.

This NOV resulted from a worker inappropriately handling radioactive debris. The enclosed response documents the actions taken regarding this issue. These actions were discussed with NRC Management in a meeting at the Region II offices on January 13, 1998.

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If you should have any questions, please contact P. L. Pace
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Sincerely,



R. T. Purcell

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT (WBN)
UNIT 1

INSPECTION REPORT NUMBER 50-390/97-11
REPLY TO NOTICE OF VIOLATION (NOV)

I. RESTATEMENT OF VIOLATION

"Technical Specification 5.7.1.1 requires, in part, that procedures shall be implemented covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, Quality Assurance Program Requirements (Operations). Appendix A of Regulatory Guide 1.33, Section 7.e, includes procedures for administrative controls, including radiation protection.

Procedure MI-68.001, Disassembly and Reassembly of the Reactor Pressure Vessel and Attachments, Revision 19, Step 3.0.G. states, "ALL loose debris is to be treated as highly radioactive until RADCON is notified and determines otherwise." This procedure implemented the radiation protection requirements of Section 7.e of Appendix A of Regulatory Guide 1.33.

Contrary to the above, during the evening shift of September 20, 1997, the licensee failed to follow MI-68.001. Specifically, an individual failed to notify RADCON so that it could determine the radiological condition of loose debris prior to picking up four pieces of highly radioactive debris in the reactor cavity. As a result, the individual received approximately 3.6 Rem to his hand (approximately seven percent of the extremity limit) in about eight seconds."

TVA's REPLY TO VIOLATION

1. Reason For The Violation

The worker primarily involved in the handling of the debris and a coworker who assisted, but did not handle the debris, performed work which was

outside the scope of their assigned task. The scope of the assigned task only authorized the workers to tighten the Nuclear Instrumentation System (NIS) covers which are located on the perimeter of the reactor vessel flange. Upon noticing the debris, one worker acted impulsively to handle and place foreign material located near the reactor vessel opening into a plastic bag which was being held by the coworker. Both workers should have notified Radiological Control (RADCON) of the existence of the debris and left the handling of the material to RADCON. In failing to "self-check" before acting, the workers' sensitivity to foreign material exclusion overrode what should have been their primary concern, avoidance of radiological hazards.

2. Corrective Steps Taken And Results Achieved

TVA implemented a series of actions as an immediate response to the handling of the debris. The measures taken by TVA included the stopping of work on the refueling floor. This allowed RADCON personnel time to assess the event and notify the personnel working in upper containment of the existence of the debris. RADCON management subsequently took action to warn site personnel of the possible existence of the debris in the Reactor Coolant System (RCS) and other systems which interact with the RCS. RADCON accomplished this through the following measures:

- The inclusion of precautions in job briefings,
- The performance of reviews of Radiological Work Permits (RWPs) for RCS related work to ensure that appropriate precautions about debris were in the RWPs,
- The use of posters to increase personnel awareness of how distance from a source affects the dose received, and
- Discussions were held in stand down meetings, departmental section meetings, safety meetings, or turnover meetings. The topics

that were primarily covered included how dose rates lessen with distance from the source and the need to treat all debris as if it is radioactive.

3. Corrective Steps That Have Been Taken To Prevent Recurrence

TVA's long term corrective measures included the incorporation of the lessons learned from this event into the appropriate site and contractor training classes. RADCON modified the program which controls the shift turnover process to ensure that turnover briefings discuss the most recent radiological conditions. RADCON also modified the controls for RWP briefings to ensure that, when appropriate, the briefings included cautions about debris. Further action by RADCON included the establishment of controls for debriefings after completion of appropriate tasks so that potential hazards can be identified and addressed.

TVA implemented a self-assessment to determine whether the immediate actions taken to alert site personnel to the unplanned exposure event had been effective. For this assessment, the WBN Training department conducted an exercise with personnel who routinely perform tasks on the RCS and related systems. WBN Training established an exercise where a team of workers was tasked with the removal of a check valve for repair. In order to ensure the validity of the training exercise, Training tested six teams and kept the workers not immediately involved in the exercise separate from those that had completed the scenario. In the briefings for the task, Training emphasized foreign material exclusion, but did not provide any cautions about the handling of debris. However, Training placed a piece of debris, similar to that handled in the unplanned exposure event, in the check valve. Training closely monitored the actions of the workers once the debris was encountered. From this exercise, Training documented that each team responded appropriately by stopping work and requesting RADCON support once the debris was encountered. Through this exercise, TVA obtained

positive confirmation that the actions taken to prevent recurrence had been effective. These actions, in conjunction with continuing implementation of the training improvements, are sufficient to prevent recurrence of similar problems.

4. Date When Full Compliance Will Be Achieved

With respect to the cited violation, WBN is in full compliance.