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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

AUG 0 1 1980

In Reply Refer To:  
RII:CJ  
50-390/80-13

Tennessee Valley Authority  
ATTN: H. G. Parris  
Manager of Power  
500A Chestnut Street Tower II  
Chattanooga, Tennessee 37401

Gentlemen:

Thank you for your letter of June 23, 1980, informing us of steps you have taken to correct the items of noncompliance concerning activities under NRC Construction Permit No. CPPR-91, brought to your attention in our letter of May 27, 1980. We will examine your corrective actions and plans during subsequent inspections.

We appreciate your cooperation with us.

Sincerely,

*R. C. Lewis*  
R. C. Lewis, Acting Chief  
Reactor Operations and Nuclear  
Support Branch

cc: C. C. Mason,  
Acting Plant Superintendent  
J. E. Wilkins,  
Project Manager  
J. F. Cox, Supervisor,  
Nuclear Licensing Section  
D. P. Ormsby, Project Engineer  
H. N. Culver, Chief, Nuclear  
Safety Review Staff

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37408 REGION II

400 Chestnut Street Tower II

June 23, 1980 8:06

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:

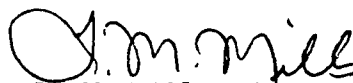
WATTS BAR NUCLEAR PLANT UNIT 1 - NRC REGION II LETTER RII:JAM  
50-390/80-13 - RESPONSE TO INFRACTIONS

The subject letter dated May 27, 1980, cited TVA with two infractions concerning preoperational testing and quality control procedures. Enclosed is TVA's response to those infractions.

If you have any questions concerning this matter, 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, Jr., Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

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WATTS BAR NUCLEAR PLANT UNIT 1  
RESPONSE TO INFRACTIONS 390/80-13-01  
AND 390/80-13-02

INFRACTION 390/80-13-01

As required by 10CFR50, Appendix B, Criterion XI, and implemented by Watts Bar Nuclear Plant FSAR Section 17.1A.11, testing is required to be identified and performed in accordance with test procedures incorporating design requirements and acceptable limits. These procedures shall include provisions for prerequisites, test instrumentation, and suitable test environment. Test results must be documented and evaluated. Construction Specification G-39, Cleaning During Fabrication of Fluid Handling Components, Section 8.4.3.1, requires the use of a filter or strainer to filter the exit water on a once-through flush, and Section 8.4.5 requires flushes to be repeated until two successive filter cloths or strainers meet the acceptance criteria. Watts Bar Field Instruction WBFI-M32, Preoperational Flushing Instructions for Residual Heat Removal System, Section 11.1, requires the quality of flush water to be virtually unchanged by flushing. Technical Instruction TI-27, Chemical Specifications, Part III (Cleanliness Criteria for Piping Systems), Section 3.3.1, requires Class A water to be used to flush all Class B systems, which includes the residual heat removal (RHR) system.

Contrary to the above, testing was not controlled in that:

1. As of April 18, 1980, preliminary testing required to demonstrate the cleanliness of the residual heat removal system instrument sensing lines was not identified or performed in accordance with written test procedures.
2. As of completion of the unit 1 RHR system flushing on June 12, 1979, WBFI-M32 did not require taking final flush samples of each portion of the system flushed. The QA record incorrectly documents one sample as representative of each flush path in each RHR system train. This procedure also failed to require the use of a flush cloth or strainer and none was used for the once-through flush of the two RHR system lines between the containment sump and the suction side of the RHR pumps. Additionally, two successive acceptable observations of the flush strainer were not required and none were done for the recirculation flushes. Also, this procedure allowed fill water to be demineralized rather than require Class A water. Demineralized water containing 8.1 ppm total solids was used, whereas the Class A water acceptance criteria was 0.5 ppm total solids.
3. As of August 20, 1979, the chemistry results of flushing of the unit 1 RHR system under WBFI-M32 were evaluated without assuring that the final flush water conductivity was virtually unchanged from the conductivity of the fill water. The conductivity had increased by a factor of approximately two.

4. As of April 23, 1980, test procedure WBNP-QCP-4.10, Appendix D, Hydrostatic/Pneumatic Testing of Piping Systems and Piping Subassemblies, did not include provisions for assuring the adequate establishment of prerequisite overpressure protection. Step 6.1.4.5 required the consideration of precautions to prevent overpressurization and detailed a suitable method which employed a relief valve. However, licensee personnel have used other methods of providing overpressure protection without these methods being documented or required to meet any formal acceptance criteria. Additionally, the procedure does not define the time interval to be recorded in Attachment A and engineers have made recordings based on varying assumptions, which has rendered this information unreliable.

This is an infraction.

RESPONSE TO INFRACTION 390/80-13-01

Corrective Action Taken and Results Achieved

1. An informal memorandum has been received from TVA's Division of Engineering Design (EN DES) which clarifies the design intent for flushing instrument sensing lines. EN DES has been requested to provide this information formally to the construction site. A procedure to cover instrument sensing lines is now being prepared. The RHR sensing lines will be reflushed in accordance with this new procedure.
2. The RHR system will be resampled when it is operated during the SIS (accumulator) flush. Samples and particulate checks will be taken for each flow path with the sample point locations identified and documented. The particulate checks will be taken by flow through 20 mesh strainers in accordance with Construction Specifications G-39 and N3M 890.

Construction Specifications G-39 and N3M 890 are being revised to eliminate the requirement for making two successive particulate inspections of flush strainers. The Class A water requirement is being changed to "Class A water or equivalent to the quality of the operating system water." The total solids required for Class A water is being deleted.

3. When the RHR system is resampled during the SIS (accumulator) flush, the sample results will meet all requirements of Construction Specifications G-39 and N3M 890, or the system will be reflushed until these requirements are met.
4. It is correct that other methods have been used to prevent overpressurization, such as stationing an inspector to observe a pressure gauge and open a valve if the pressure rises above the desired pressure. To our knowledge, we have never unexpectedly overpressured a line during hydro testing at Watts Bar. Pressure gauges used are verified both before and after testing to ensure accurate

Pressure readings, and to prevent subsequent "out of calibration" reports from invalidating a test. An addendum is being issued to WBNP-QCP 4.10, Appendix D, to address the issues raised in this example of noncompliance.

#### Corrective Action Taken to Avoid Further Noncompliance

1. The issuance of the procedure previously mentioned and training of employees in its use will prevent recurrence of failure to identify, perform, and document instrument flushes.
2. Future flushing procedures will require water samples and particulate checks for each flow path. These sample points will be identified and documented.
3. Personnel performing flushes have been instructed to follow all details of the flushing procedures, including the comparison of sample results for changes.
4. The addendum to Appendix D of WBNP-QCP 4.10 will address the overpressure protection and time interval areas to make them more clear and eliminate the confusion as to what is required.

#### Date When Full Compliance Will Be Achieved

- 1, 2, 3. The flush of the SIS (accumulators) is now scheduled for August 15-30, 1980. We plan to be in full compliance by October 1, 1980.
4. We plan to issue the addendum to Appendix D of WBNP-QCP 4.10 by July 1, 1980.

#### INFRACTION 390/80-13-02

As required by 10CFR50, Appendix B, Criterion V and implemented by FSAR Section 17.1A.5, activities affecting quality shall be prescribed by and accomplished in accordance with appropriate instructions, procedures, or drawings. Quality Control Procedure (WBNP-QCP) 1.1, Print Room Procedure, Section 6.1.7, requires that superseded drawings be removed and destroyed and this be noted on the ledger cards for the drawings. Section 6.2.1 requires the stamping of new or revised drawings with "MASTER." WBNP-QCP-1.13, Preparation and Documentation of Field Change Requests, Section 6.1.1.2, requires that the print room master drawing of a system affected by a field change request be annotated by circling the affected area.

Contrary to the above, as of April 22, 1980:

1. Sixteen of 200 ledger cards maintained on drawings of safety-related and radiological waste systems did not indicate that superseded prints were removed and destroyed.
2. Six of 100 safety-related manufacturing master prints reviewed were not stamped "MASTER."

3. Four of 25 safety-related master prints which were affected by Field Change Requests did not contain the required annotation.

This is an infraction.

RESPONSE TO INFRACTION 390/80-13-02

Corrective Action Taken and Results Achieved

- Item 1 - Print room employees are in the process of reviewing the ledger cards and marking the number of prints destroyed.
- Item 2 - The master file was reviewed and the prints that had been overlooked were stamped "MASTER."
- Item 3 - The Electrical Engineering Unit (EEU) drawings cited were corrected. EEU employees then reviewed all electrical FCR's and any drawing discrepancies were corrected.

The specific FCR's cited by this infraction were corrected by the Hanger Engineering Unit (HEU) and HEU will review all hanger FCR's for compliance.

Corrective Action Taken to Avoid Further Noncompliance

- Item 1 - Print room employees are being reeducated to reemphasize the requirements of WBNP-QCP-1.1.
- Item 2 - Employees engaged in these activities have been reeducated in requirements of WBNP-QCP-1.1.
- Item 3 - Retraining of the EEU on WBNP-QCP-1.13, "Preparation and Documentation of Field Change Requests," was held May 19, 1980.

HEU employees are being reeducated on WBNP-QCP-1.13 in order to avoid further noncompliances.

Date When Full Compliance Will Be Achieved

- Item 1 - Full compliance will be achieved June 30, 1980.
- Item 2 - We are now in full compliance.
- Item 3 - The EEU is now in full compliance with the procedure.

HEU will be in full compliance by July 11, 1980.