TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

September 11, 1980

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 - NRC INSPECTION REPORT RII:CJ 390/80-21 AND 391/80-15 - RESPONSE TO INFRACTIONS 390/80-21-01, -02, -03, -04 AND DEFICIENCIES 390/80-21-05, 391/80-15-01 AND 390/80-21-06, 391/80-15-02

The subject inspection report dated August 14, 1980, cited TVA with four infractions and four deficiencies. Enclosed is TVA's response.

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

8105210548

OFFICIAL COPY

An Equal Opportunity Employer

ENCLOSURE
WATTS BAR NUCLEAR PLANT
RESPONSE TO INFRACTIONS 390/80-21-01, -02, -03, -04
AND DEFICIENCIES 390/80-21-05, 391/80-15-01,
AND 390/80-21-06, 391/81-15-02

INFRACTION 390/80-21-01

As required by 10CFR50, Appendix B, Criterion V, and implemented by FSAR Section 17.1A.5, activities affecting quality shall be accomplished in accordance with appropriate procedures. Section 6.3.11 of Watts Bar Nuclear Plant Quality Control Instruction (WBNP-QCI) 1.22, "Transfer of Permanent Features to the Division of Nuclear Power," requires that, prior to system tentative transfer, Responsible Engineering Unit Supervisors verify the completion of work and note any incomplete work or quality assurance documentation on the incomplete work item list.

Contrary to the above, as of June 19, 1980, activities affecting quality were not accomplished in accordance with procedures in that the verified incomplete work items list for the tentative transfer of the unit 1 Upper Head Injection (UHI) System did not include the following incomplete work or quality assurance documentation:

1. Control air supplies bypassed two solenoid control valves and were disconnected from the valve operators of two other valves.

2. The two UHI water accumulator level transmitters were not wired.

3. Two instrument's sensing lines were disconnected.

4. One solenoid was disconnected from its solenoid control valve.

5. Electrical conduit bodies without cover plates were noted in four locations.

6. Electrical conduit bodies without cover plates and with wires protruding from the bodies were noted in eight locations.

7. Two temporary pipe supports had not been removed.

8. Six hanger supports were not documented in the quality assurance record files.

9. Two installation adjustments were improperly made and the armor on one cable was broken.

This is an infraction applicable to unit 1.

Corrective Action Taken and Results Achieved

The incomplete work items on UHI identified by this infraction have either been completed or placed on the Outstanding Work Item List (OWIL).

Action Taken to Prevent Recurrence

WBNP-QCI-1.22, "Transfer of Permanent Features to the Division of Nuclear Power," has been revised to more clearly define the methods to be used by the responsible engineering unit supervisors to verify the completion of work and note any incomplete work or quality assurance documentation on the incomplete work item list. These methods include (1) written notification to the engineering units of an impending transfer work-through; (2) mandatory participation by the responsible engineers in identifying incomplete items; (3) clearly identified time frames and deadlines for when incomplete work items must be identified and when incomplete quality assurance documentation must be identified for each transfer.

Date When Full Compliance Will Be Achieved

The revision of WBNP-QCI-1.22 will be issued by September 26, 1980.

INFRACTION 390/80-21-02

As required by 10CFR50, Appendix B, Criterion V, and implemented by FSAR Section 17.1A.5, activities affecting quality shall be accomplished in accordance with appropriate drawings. Note 6 on drawing 47N600-0-4, Electrical Instruments and Controls, required the attachment of drain lines to high point vents in the potentially contaminated Upper Head Injection System and the routing of these drain lines to the closed drain system.

Drawing 47N600-276, Electrical Instruments and Controls, required the calibration connections for the Upper Head Injection System water accumulator level instruments to terminate as a threaded nipple.

Contrary to the above, as of June 19, 1980, activities affecting quality were not conducted in accordance with drawings in that:

1. Six high point vents in the instrumentation of the upper head injection water accumulator were not piped to the closed drain system.

2. The four upper head injection water accumulator level instrument calibration connections were unthreaded.

This is an infraction applicable to unit 1.

Corrective Action Taken and Results Achieved

The six high-point vents have been routed to the closed drain system per drawing 47W600-0-4, Note 6. The four calibration connections have been threaded per drawing 47W600-276.

Corrective Action Taken to Avoid Further Noncompliance

Action to prevent recurrence consisted of retraining employees to ensure that features are "walked-down" before transfer and that incomplete items are listed on "punch-lists" for inclusion in the Outstanding Work Item List.

Date When Full Compliance Will be Achieved

We are now in full compliance.

INFRACTION 390/80-21-03

As requested by 10CFR50, Appendix B, Criterion V, and implemented by FSAR Section 17.1A.5, activities affecting quality shall be accomplished in accordance with appropriate procedures or drawings. Section 6.5.1 of Watts Bar Nuclear Plant Quality Control Procedure 3.5, Installation, Inspection and Testing of Control, Signal, and Power Cables required the termination of cables per the appropriate connection diagram. Wiring Diagrams, Miscellaneous Valves, Connection Diagrams, 45N1630-57, showed no termination of cables I-3V-87-3424A and I-3V-87-3434A between solenoids I-FSV-87-7A and I-FSV-87-8A and their respective junction boxes.

Contrary to the above, as of June 27, 1980, activities affecting quality were not accomplished in accordance with procedures in that cables I-3V-87-3424A and I-3V-87-3434A were terminated in conduit bodies adjacent to solenoid valves I-FS-87-7A and I-FSV-87-8A, a location not shown on the wiring diagram.

This is an infraction applicable to unit 1.

Corrective Action Taken and Results Achieved

This infraction was discussed with the NRC inspector before and after his report by the unit supervisor and others. It was pointed out that level switches and limit switches do not have terminal strips for the purpose of terminating cables. Common practice at all TVA projects has been to terminate cables inside condulets which have removable covers for access purposes using inline butt splices. Engineering Design (EN DES) practice on connection diagrams has been not to show the condulet as the location of the termination. This problem was recognized early in the project and design information request (DIR) E-001 was written to obtain instruction for this type termination. The practice used by the project is in accordance with the National Electric Code and also according to the reply received from EN DES in response to DIR E-001 dated July 6, 1977. The project was in violation of the instructions received in that the answer received from EN DES stated that this method was to be used only on Class IE cables and not inside the containment. Nevertheless, construction considered this to be a drawing deficiency and an unresolved item to be resolved by EN DES. Construction therefore wrote DIR E-41 to request instructions and revisions to applicable drawings as needed.

EN DES disposition was in agreement with the construction contention that accepted industry practice was being used. EN DES drawings will not be revised to show condulets where the termination are made.

Action Which Will Be Taken To Prevent Further Noncompliance

Review quality control procedures and drawings for similar situations which may not be shown on EN DES drawings or other criteria. A procedure review is now in progress. No further action is planned because EN DES disposition of DIR E-41 gives the obvious conclusion that construction is in compliance and no further action is required.

When Full Compliance Will Be Achieved

Construction is now in full compliance.

INFRACTION 390/80-21-04

As required by 10CFR50, Appendix B, Criterion V, and implemented by Watts Bar Nuclear Plant, FSAR, Section 17.1A.5, activities affecting quality must be prescribed by appropriate instructions.

Contrary to the above, as of June 27, 1980, no instructions authorized the current practice of adding Sepco Grafoil Ribbon Tape to spiral wound gaskets. Also, no procedures controlled the procurement, storage, handling, and installation of this tape or the storage or handling of spiral wound gaskets to assure appropriate compatibility with cleanliness classification of the safety-related piping systems in which they are used.

This is an infraction applicable to unit 1.

Corrective Action Taken and Results Achieved

Certification has been received from SEPCO, the crinkle tape manufacturer, which establishes the leachable chlorides of the tape and that it is not detrimental to system cleanliness.

Action Taken to Prevent Recurrence

Watts Bar Nuclear Plant Quality Control Instruction (WBNP-QCI) 4.31 has been issued authorizing the use of Sepco Grafoil Crinkle Tape and defines its handling, storage, and installation. Employees have been trained in the use of Grafoil Crinkle Tape and the requirements of the instruction. Procurement of this tape is accomplished in accordance with Watts Bar Nuclear Plant Quality Control Procedure (WBNP-QCP) 1.20, "Site Control of Procurement Documents," or WBNP-QCP-1.17, "Transfer of Materials, Parts, and Components." WBNP-QCI-4.31 also defines the storage and handling of spiral wound gaskets.

Date When Full Compliance Will Be Achieved

We are now in full compliance.

DEFICIENCY 390/80-21-05 and 391/80-15-01

As required by 10CFR50, Appendix B, Criterion V, and implemented by Watts Bar Nuclear Plant, FSAR, Section 17.1A.5, activities affecting quality must be accomplished in accordance with documented instructions. Section 6.1.2.3. of Watts Bar Nuclear Plant Quality Control Procedure (WBNP-QCP) 4.10, Appendix D, Hydrostatic/Pneumatic Testing of Piping Systems and Sub-Assemblies, required hydrostatic test pressure to be 1.25 times system design pressure. Design drawing 47W432 series, Residual Heat Removal System Bill of Material, stated the design pressure of the piping within the bounds of hydrostatic tests NPS 1, 2, 3, and 4 of the units 1 and 2 Residual Heat Removal Systems was 50 lbs/in$^2$g. Section 6.1.3.3 of the same procedure required test gauge range to be minimum of 1.5 times the test pressure. Additionally, Attachment A required the designation of the boundary limits of systems tested.

Contrary to the above:

1. As of December 1, 1977, hydrostatic tests Nos. 1, 2, 3, and 4 on the units 1 and 2 Residual Heat Removal Systems were performed at test pressures of 75 to 77 lbs/in$^2$g rather than 62.5 lbs/in$^2$g.

2. As of March 5, 1979, test gauges used for the 750 lbs/in$^2$g hydrostatic test No. 5 on the unit 1 Residual Heat Removal System were 0-1000 lbs/in$^2$g range, rather than the minimum range of 0-1125 lbs/in$^2$g.

3. Residual heat removal hydrostatic test sheet Nos. 5 dated March 5, 1979, and 6 dated August 14, 1979, did not indicate that valve 1-FCV-63-93 was a boundary, yet the adjacent system status dictated that this valve must have been a boundary and the engineer stated it was.

Corrective Action Taken and Results Achieved

1. Hydrostatic test numbers 1 and 2 were performed at a time when the current revision of ASME Code Section III specified 1.5 times the design pressure as the hydrostatic test pressure and the code of record specified 1.25. These were the first hydrostatic tests performed at Watts Bar Nuclear Plant, and there was a question as to which pressure would be applicable. Also, these tests included welds that would be inaccessible for visual inspection at a later time. Therefore, the responsible engineer, after consulting TVA's Division of Engineering Design (EN DES), chose to use the higher test pressure. Tests 3 and 4 were performed at a later date and involved additional components in this same piping system. The test engineer referred to tests 1 and 2 for the test pressure on these tests rather

than using the EN DES drawing as his information source. It has been determined from EN DES information that the pipe was not overstressed by the application of this additional pressure.

2. Hydrostatic test No. 5 has been superseded by test No. 6 which was performed using a test gauge of the correct pressure range.

3. Valve 1-FCV-63-93 was left off the test boundary description. The hydrostatic test record for test No. 6 has been revised to include this valve as a boundary.

Action Taken to Prevent Recurrence

1. It has been determined that 1.25 times design pressure is the correct hydrostatic test pressure. All hydrostatic test performed on piping systems within the jurisdiction of ASME Code Section III shall be performed at that pressure as specified.

2. The responsible test engineer has been reinstructed in the test gauge range requirements.

3. Engineering employees conducting hydrostatic test have been instructed to review the hydrostatic test sheets and verify that all necessary information is included.

Date When Full Compliance Will Be Achieved

We are now in full compliance.

DEFICIENCY 390/80-21-06 and 391/80-15-02

As required by 10CFR50, Appendix B, Criterion V, and implemented by Watts Bar Nuclear Plant, FSAR, Section 17.1A.5, activities affecting quality must be accomplished in accordance with documented instructions. Step 5.2 of Watts Bar Field Instruction (WBFI) G-10, Disposition of Engineering Change Notices (ECN), requires the Quality Control and Records Unit to receive completed ECN data packages from the ECN coordinator for filing. Additionally, Step 6.1.5 requires each responsible Engineering Unit and Modifications and Additions Group to update the ECN status report monthly.

Contrary to the above, as of June 27, 1980:

1. The Quality Control and Records (QC&R) Unit was not receiving completed ECN data packages.

2. Seven of eleven ECN's reviewed had been completed more than one month ago, yet the ECN status had not been updated to reflect completion.

Corrective Action Taken and Results Achieved

Watts Bar Field Instruction G-10 is being rewritten to delete the requirement for the QC&R Unit to file ECN data packages. All completed ECN data packages are now stored in Startup, Test, and Coordination Unit. The status of ECN's 1744 and 1948 have been updated to show their completion. Engineering Unit supervisors have been notified that ECN's 2274, 1965, 2275, 2426, and 1824 are complete and that they are required by WBFI G-10 to verify that the ECN's are complete.

Action Taken to Prevent Recurrence

WBFI G-10 will be rewritten as a Watts Bar Nuclear Plant Quality Control Instruction (WBNP-QCI) to define the engineering unit responsibilities for verifying ECN completion status and to state that completed packages will be stored in ST&C Unit.

Date When Full Compliance Will Be Achieved

WBFI G-10 will be reissued as a WBNP-QCI by October 15, 1980. The completion status of ECN's 2274, 1965, 2275, 2426, and 1824 will be updated by September 15, 1980, to show their completion.

In addition to these corrective actions for the given items of noncompliance, TVA has implemented a Quality Assurance Training Program, Watts Bar Nuclear Plant Quality Control Instruction (WBNP-QCI) 1.11. This program has responsibility for indoctrination and training of site employees performing quality-affecting activities in order that appropriate proficiency is achieved and maintained. It also defines the program for certification of inspection, examination, and testing employees.