

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

AUG 16 August 10, 1979  
5:28

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:

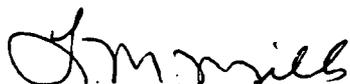
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NRC REGION II LETTER  
RII:DKW 50-390/79-20, 50-391/79-16 - INSPECTION REPORT -  
SUPPLEMENTAL RESPONSE TO DEVIATION AND INFRACTION

The subject letter dated May 30, 1979, cited TVA with one deviation  
and two infractions in accordance with 10 CFR 2.201. TVA's response  
to that deviation and two infractions was submitted on June 25, 1979.  
Enclosed is TVA's supplemental response as requested in C. E. Murphy's  
letter to H. G. Parris dated July 24, 1979.

If you have any questions concerning this matter, please get in touch  
with D. L. Lambert at FTS 854-2581.

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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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
SUPPLEMENT RESPONSE TO INFRACTION 390/79-20-01  
AND 391/79-16-01 AND DEVIATION 390/79-20-04

A. Infraction 390/79-20-01 and 391/79-16-01

(1) Description

As required by Criterion V of Appendix B to 10 CFR 50 and implemented by Watts Bar Nuclear Plant (WBNP) FSAR Section 17.1A.5, the appropriate instructions will be used for activities affecting quality. WBNP Quality Control Procedure 3.5 requires that electrical cables be installed in raceways as detailed on their pull slips and as designated in this procedure.

Contrary to the above, two safety-related cables were not routed as required by their pull slips. The two cables and their routing were:

<u>Cable Number</u>	<u>Required Cable Tray Route</u>	<u>Actual Cable Tray Route</u>
1-5PP-74-575-A	5A2192	5A2189
2-5PP-63-600-A	5A2224	5A2208

(2) Corrective Action Taken

It should be noted that this infraction is identical in nature to a problem previously identified as Infraction 390/79-07-01. The two cables noted above as being incorrectly pulled were pulled before corrective action to 390/79-07-01 had been implemented.

Procedure WBNP-QCP-3.5 R8 was approved for issue on April 19, 1979. Craft, engineering, and inspection employees were issued controlled copies of the procedure on April 24, 1979. Procedure 1.16 was also revised in accordance with WBNP-QCP-3.5, Revision 8 and issued at the same time. This procedure describes the computerized system used as the basis of all electrical and instrumentation documentation. A training session was conducted on April 25, 1979, for all electrical craft foremen responsible for the installation and termination of electrical cable. The foremen were instructed to study the procedures, instruct their crew members as to their provisions, and make them available to each crew member for study and/or reference.

To provide an indication of the quality of cable installation, approximately 64 cables installed on the 6900 V shutdown system boards and the 480 V shutdown system boards were randomly selected by TVA employees and reinspected during the period from

March 15, 1979, to April 16, 1979. No evidence of incorrect cable routing was found during this reinspection. The licensee then began a program to reinspect the remaining cables installed on these shutdown system boards. This reinspection is to provide assurance as to the quality of cable installation and is expected to be completed by November 1, 1979.

Nonconformances are being written for all nonconforming cables found during reinspection.

(3) Action Taken to Avoid Further Noncompliance

- (a) A primary reason that cable was being incorrectly routed is that electrical craft employees responsible for pulling cable were not aware of the reasons for installing the cable exactly as specified by the pull slip. The issuance of WBNP-QCP-3.5R8 and the followup training and instruction should resolve this part of the problem.
- (b) Because of field routing of electrical conduit, the as-constructed conduit to tray interface location may be different from the location used in the design routing of cable by computer. It is therefore possible that the pull slip could specify one or more node numbers which are not needed or that one or more node numbers could have been omitted from the pull slip which were actually needed to properly route the cable depending upon where the conduit was located. To correct this problem, Revision 9 to WBNP-QCP-3.5 has been issued to provide instructions for documenting the node points of actual cable pull routes if they are different from those specified on the pull slip and for ensuring these node point changes are acceptable.
- (c) To provide more thorough surveillance of cable installation additional inspection employees will be added to the cable installation program. Also, Field Instructions WBFI-E7 entitled "Cable Auditing By Use of Signal Tracer" was written and issued May 17, 1979. These instructions describe the methods to be used by inspection employees to verify that safety-related cables are routed as specified by the pull slip. Safety-related cables will be inspected 100 percent and nonsafety-related cables (Non-Divisional) will be inspected on a surveillance basis. This policy began during the week of June 4, 1979. Revision 9 to procedure WBNP-QCP-3.5 incorporates this change.

It has been recognized that instances could occur where it might be desirable to remove a permanently installed cable in which documentation

was complete. Field Instructions WBFI-E8 entitled, "Removal of Permanent Cables" was written and issued on May 17, 1979, to provide a method of removing and/or replacing permanent electrical cable installed in any conduit and/or cable tray. Revision 9 to procedure WBNP-QCP-3.5 incorporates this change.

Reinspections up to this time, have not revealed any instance where misrouting of cable has resulted in a cable being installed in a cable tray of the wrong voltage level or a situation where the train separations criteria was violated. A violation of train separations criteria would be highly improbable because of the extensive color coding scheme specified by Procedure WBN-QCP-3.5. The routing problems found have been restricted to difficulties caused by field routing of conduit (described in (b) above) or where a cable had been incorrectly routed in a parallel tray of the same voltage level. For example, Figures 1 and 2 attached show the routes according to the pull slip and the path the cable was actually routed for the two cables listed in Infraction 390/79-20-01 and 391/79-16-01. Therefore, the cable installation program at WBNP is believed to be adequate for producing a high quality product. No nonconformances have been found to this date on cable installations such that the safe operation of the plant would have been compromised. Assurance that future cable installations will be in accordance with design is provided with implementation of the described corrective action.

(4) Date of Compliance

TVA was in compliance upon issuance of Revision 9 of WBNP-QCP-3.5 including followup instruction to employees. This was completed August 1, 1979.

B. Deviation 390/79-20-04

(1) Description

The TVA letter to Region II dated April 6, 1979, committed to the issuance of Revision 8 to Quality Control Procedure (QCP) 3.5 and to the training of site employees in its use by April 16, 1979.

Contrary to the above, as of April 20, 1979, QCP-3.5 Revision 8 had not been issued and, therefore, site employees had not been trained in its use.

(2) Corrective Action Taken

Because of unforeseen difficulties, Revision 8 to WBNP-QCP-3.5 was not approved for issue until April 19, 1979. Site employees were issued the procedure on April 24, 1979, and a training session on the revisions was held for electrical craft foremen on April 25, 1979. The foremen were instructed to study the procedures and make them available to their work crews.

(3) Action Taken to Prevent Further Noncompliance

Instructions will be issued to Watts Bar site employees to notify the site QC&R unit if a commitment date for resolution of an inspection item will not be met. A new date for compliance will also be provided. The QC&R unit will then verbally notify the OIE onsite inspector of the new commitment date. This new commitment date will then be formally transmitted to the NRC.

(4) Date of Compliance

TVA is now in full compliance.