

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
5N 157B Lookout Place

JUN 5 1986 : d d

WBRD-50-390/86-14

U.S. Nuclear Regulatory Commission  
Region II

Attention: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Dr. Grace:

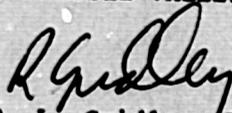
WATTS BAR NUCLEAR PLANT UNIT 1 - DISCREPANCIES INVOLVING QUALITY ASSURANCE  
CONDUIT SUPPORTS - EMPLOYEE CONCERNS IN-85-458-006 AND IN-85-119-006  
WBRD-50-390/86-14 - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Steve Weise on December 9, 1985 in accordance with 10 CFR 50.55(e) as NCR WBN 6463. Previous interim reports were submitted on January 24 and February 28, 1986. Inspector Bob Carroll was notified on February 6, 1986 of related NCR W-333-P. TVA's letter of March 24, 1986 stated that rather than reporting it separately, this deficiency would be included as an item under NCR 6463. Enclosed is our third interim report. We expect to submit our next report on or about October 16, 1986.

If there are any questions, please get in touch with R. H. Shell at  
FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. L. Gridley, Director  
Nuclear Safety and Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1  
DISCREPANCIES INVOLVING QUALITY ASSURANCE CONDUIT SUPPORTS  
EMPLOYEE CONCERNS IN-85-458-006 AND IN-85-119-006

WBRD-50-390/86-14

SCR WBN 6463-S

NCR W-333-P

10 CFR 50.55(e)

THIRD INTERIM REPORT

Description of Deficiency

A physical walkdown and reinspection of selected conduit supports was requested by investigators of the Quality Technology Corporation's (QTC) Employee Response Team as the result of the employee concerns referenced. The inspection, performed on the auxiliary and reactor building conduit and cable trays, revealed several discrepancies involving safety-related supports. The discrepancies noted in Significant Condition Report (SCR) WBN 6463-S have been compiled into groups A through F below. (See attachment for specific items in each group.)

- Group A - The items listed in this group are installed supports which deviate from the issued drawing and do not have approved field change requests (FCRs) and/or variances. Therefore, these supports have unknown/undocumented structural capacity or factors of safety.
- Group B - The items listed in this group have not been tagged with their identifying numbers; however, supports were located from the design drawings.
- Group C - Each item listed in this group has been documented as a different type of typical support than that which is installed.
- Group D - The items listed in this group have specific miscellaneous problems. Discrepancies are noted on the attachment.
- Group E - The items listed in this group are still documented in a computer printout from the construction accountability program but cannot be located in the plant.
- Group F - The items listed in this group have been deleted from the construction accountability program but are still used in the plant. They also have miscellaneous problems.

Additionally, Nonconformance Report (NCR) W-333-P was issued identifying six instances where unsupported spans for conduit in the reactor building and the auxiliary building's mechanical equipment room are greater than spans allowed in TVA's 47A056 drawings, specifically note 35 on drawing 47A056-1D R4. The

distances by which allowable spans are exceeded range from 1 foot to 6 feet. These conduits were added to Group A above. Also, a conduit identified as being installed per detail A5 of drawing 45N860-5 which calls for the installation of flex conduit, was installed with four feet of rigid and two feet of flex conduit instead of just the flexible conduit called for. This nonconforming condition was added to Group D.

The root causes of these discrepancies are errors and procedure misinterpretations by craft, engineering, and inspection personnel.

#### Safety Implications

Various supports listed have unknown or undocumented structural capacity or factors of safety. Worst-case loadings on supports could result in concrete anchorage failure and subsequent failure of the conduits. Cables within these conduits could be damaged, thus rendering safety-related systems inoperable. These conditions could adversely affect the safe operation of the plant due to the inability of systems, components, or structures to perform their intended design functions.

#### Interim Progress

TVA is still in the process of investigating these deficiencies. Corrective methods for the specific deficiencies identified in the attachment will be accomplished by the following:

- Group A - FCRs and/or variances will be written as required to correct hanger deficiencies and the supports will then be reinspected.
- Group B - Supports will be identified and tagged in accordance with the quality control procedures (QCPs) and supports will be reinspected.
- Group C - Support types, documentation, and/or variances will be verified for correctness and supports will be reinspected.
- Group D - Problems will be corrected by the applicable method required for each case and then reinspected.
- Group E - Support documentation, location, and conduit or junction box being supported will be verified if possible. If support still cannot be located, the support number will be deleted from the printout.
- Group F - Supports will be reworked and/or documented as required and will be reinspected.

In addition to the above corrective methods, TVA is developing a sampling program to establish the adequacy of both the fabrication installation and the accountability documentation. A sample size of sixty unit 1 and common conduit supports will be reinspected to the current TVA requirements. Conduits/supports which do not meet these requirements will be submitted by variances for evaluation. If all of the supports in the sample are determined to be acceptable after structural evaluation, the fabrication/installation deficiency will be considered closed. The documentation aspects will also be evaluated from the results of the sampling program for adherence to the applicable construction requirements.

TVA will provide further information regarding the sampling program, corrective action, and action to prevent recurrence in our next report to NRC on or about October 16, 1986.

ATTACHMENT

Group 1-CSP-293-3243/5 (also D)  
A 0-CSP-292-3944/9  
0-CSP-292-3545/3 (also D)  
0-CSP-292-3972/1  
0-CSP-292-3767/Z (also D)  
0-CSP-292-3550/3  
1-JB-292-2668 (also B)  
0-CSP-292-3736/2

Group 0-CSP-292-3932/0  
B 0-JB-292-1547-A (also C)  
1-JB-292-3241  
1-JB-292-2668 (also A)  
1-JB-292-5370  
1-JB-293-305-G  
1-JB-293-585  
1-JB-293-798  
1-JB-293-598  
1-JB-293-522-A  
1-JB-293-1003  
1-JB-293-3131 (also D)

Group 1-CSP-293-3174/X  
C 0-CSP-292-3922/7  
0-JB-293-1547-A (also B)

Group 1-CSP-293-0329/X - Two hole strap loose on support.  
D 1-CSP-293-3243/8 - Anchor needs grouting.  
1-CSP-293-3243/5 - Bolt protruding and two hole straps overlap each other (also A).  
0-CSP-292-3930/2 - Box is a 47A056-114 typical with abandoned anchors. Anchors drilled inside box as a 47A056-101 typical.  
0-CSP-292-3767/Z - This support carries a 6" conduit; 47A056-55 typical does not allow anything over 5" conduit.  
1-JB-292-132B - Holes reamed out in junction box (JB) cover and screwed in at an angle.  
0-CSP-292-3545/3 - Weld splatter.  
1-JB-293-3131 - Missing bolt, loose bolt, unacceptable bolt (also B).  
0-CSP-292-1541/42 - Anchors need grouting.

First support from 1-JB-293-1003 on conduit 1R-2062, 47A056-66 typical not identified.

First support from 1-JB-293-522-A on conduit 1-VO-1215-A and 1-VC-1220-A not identified.

**Group** 0-CSP-292-3915/9  
**E** 0-CSP-292-3941/0  
0-CSP-292-3944/5  
0-CSP-292-3693/1

**Group** 0-CSP-292-3944/3 - Anchor needs grouting, needs FCR and/or variances.  
**F** 0-CSP-292-3928/5 - Documented wrong type of support, anchors need grouting, identified with two different tags, need FCR and/or variance.  
0-CSP-292-3360/1 - Need FCR and/or variance.  
0-CSP-292-3935/9 - Documented wrong type support, insufficient welds, support below this not identified, two-hole straps overlap each other.  
0-CSP-292-3887/4 - Anchors need grouting.