

UNITED STATES GOVERNMENT

**Memorandum**

TENNESSEE VALLEY AUTHORITY

**TO: Those Listed****FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K****DATE: FEB 10 1986****SUBJECT: TRANSMITTAL OF ACCEPTED FINAL REPORTS**

The attached final reports covering the following concerns have been issued by NSRS without corrective action and are transmitted for your information.

IN-85-842-001 (I-85-295-WBN)  
IN-86-167-004

  
K. W. Whitt

H. L. Abercrombie, WBN  
W. C. Bibb, BFN  
W. T. Cottle, WBN  
James P. Darling, BLN  
R. P. Denise, LP6N40A-C  
D. R. Nichols, E10A14C-K  
Scott Schum, QTC/ERT-WBN  
Eric Sliger, LP6N48A-C

BFS:GDM  
Attachments

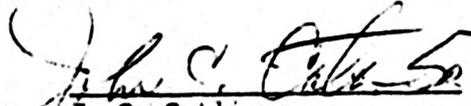
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TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
NSRS INVESTIGATION REPORT NO. I-85-295-WBN  
EMPLOYEE CONCERN IN-85-842-001  
MILESTONE 6

SUBJECT: SEALING OF PENETRATIONS BETWEEN BUILDINGS

DATES OF INVESTIGATION: December 6, 1985-January 31, 1986

INVESTIGATOR:	 J. C. Catlia	<u>FEB 6 1986</u> Date
REVIEWED BY:	 J. D. Smith	<u>2-5-86</u> Date
APPROVED BY:	 W. A. Harrison	<u>2/6/86</u> Date

## I. BACKGROUND

An investigation was conducted by the Nuclear Safety Review Staff (NSRS) to determine the validity of Employee Concern IN-85-842-001 which was received by the Quality Technology Company (QTC) on July 29, 1985. The concern stated:

Unit #1, (and #2 where joined), Aux building 737' elev, Diesel Gen. building, 760' elev, Control building, 741' elev & 729' elev Nuclear Power's own designated number on sleeve is not cross-referenced to the conduit number or is not the same number as on the design drawings. The Nuclear Power number only is on the MR and a field verification walkdown could not verify the penetration sleeve seals were done/inspected per design drawing.

## II. SCOPE

The scope of the investigation included ascertaining the configuration control requirements of these penetrations and a review of Maintenance Requests (MR) to verify whether the repairs met these requirements.

## III. SUMMARY OF FINDINGS

### A. Requirements and Commitments

#### 10CFR50 Appendix B

1. Criterion VIII requires that identification of an item be maintained throughout fabrication, erection, installation, and use.
2. Criterion III requires coordination among participating organizations.
3. Criterion X requires an inspection program to verify conformance with drawings.

### B. Findings

The NSRS investigator reviewed three MRs associated with the penetrations located as specified on the employee concern.

1. The MRs reviewed showed all of the following.
  - a. Procedure Number
  - b. Drawing Number
  - c. Penetration Number

2. For damaged seals, a special procedure was written for repair.
3. Inspection was performed and signed off by a TVA QC inspector on supplemental sheets to the procedure.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

- A. The MR met identification requirements by showing drawing number and penetration numbers. Use of these numbers met 10CFR50 Appendix B Criterion VIII.
- B. The use of the drawing number and penetration numbers provided the required coordination among participating organizations and thus met 10CFR50 Appendix B Criterion III.
- C. The existence of proper procedures and the inspection signoff thereon met the requirements of 10CFR50 Appendix B Criterion X.
- D. The allegation could not be substantiated.

##### Recommendations

None.



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COMPANY**

Sweetwater, TN 37874

(615)365-4414

ERT INVESTIGATION REPORT

PAGE 1 OF 3

CONCERN NO: IN-86-167-004

CONCERN: Personnel performing welder re-quals (updates) are not qualified to do so due to inexperience in welding activities.

INVESTIGATION

PERFORMED BY: W. M. Kemp, Jr.

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DETAILS

ADDITIONAL INFORMATION FROM THE CI:

The present welder requalification (recertification/update) program allows for the foreman and general foreman to observe the welder and then sign off his card at least once per every 90 days. How can an iron worker or sheetmetal worker discipline foremen verify a welders competence to weld?

DOCUMENTATION/REQUIREMENTS REVIEWED:

ASME Section IX	Welders Qualification		
AWS D1.1	Welders Qualification		
QCI 4.02 Rev. 4	Welder and Welding Qualification	Operator	Performance
Welder/Welding Operator	Renewal Records		

This concern is unsubstantiated.

The practice of a "craft supervisor" verifying a process used by a welder for renewal of qualification was common under the old program (prior to Aug. 26, 1985). Discrepancies noted with the old program (such as the lack of documentation to support renewal of qualifications) have been identified in the ERT Reports listed in the Conclusion section.

REQUIREMENTS:

ASME Section IX QW 322 Renewal of Qualification states: "The performance qualifications of a welder or welding operator shall be affected under the following conditions:"

"a) when he has not welded with a process during a period of 3 months or more his qualifications for that process shall expire, except when he is welding with another process the period may be extended to 6 months;"

CONCERN NO: IN-86-167-004

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**DETAILS, continued****REQUIREMENTS, continued**

"b) when he has not welded with any process during a period of 3 months, all his qualifications shall be expired including any which may extend beyond 3 months by virtue of (a) above."

**AWS D1.1 Paragraph 5.30 Period of Effectiveness.**

"The welders qualification as specified in this code shall be considered as remaining in effect indefinitely unless (1) the welder is not engaged in a given process of welding for which the welder is qualified for a period of exceeding six months or unless (2) there is some specific reason to question a welders ability".

At the time the concern was given, QCI 4.02 Rev. 4 was in effect. QCI 4.02 Para. 6.4 Verification and Renewal of Qualification 6.4.1.2 states: (WEU) "verifies by field observations from quality control units, quality assurance records, or actual use to the process in test facilities witnessed by the WEU/WQC that welders/welding operators maintain there performance certification by using the specific process (GT-SM-GM-etc) for which they are qualified"

Para 6.6 Certification Maintenance", states that the "WEU... notifies the Craft Supervisor of an impending expiration date of any welder for any welding process."

The question within the concern "How can an ironworker or sheetmetal worker discipline foreman verify a welder competent to weld?" is answered as follows:

Per Procedure QCI 4.02 Rev. 4, it was the "craft supervisor" responsibility to "verify" that the welder welded in a given process, ensuring that the renewal was within QCI 4.02 guidelines. The "craft supervisor" was not determining welder competence, only verifying the process used and the welder for renewal of qualification.

CONCERN NO: IN-86-167-004

DETAILS, continued

Prior to Stop Work Order #25 issued on 8/25/85, this was the method used. QCI 4.02 Rev. 5 and 6, now gives WEU complete responsibility for maintaining welder's certification with support of the applicable crafts. In addition, WQC is now responsible for reviewing the Welding Material Requisition issue slips.

Previous ERT Investigations have addressed generic deficiencies in the control of welder certifications prior to Aug. 26, 1985. The "new program" should preclude the deficiencies from occurring, however, this does not resolve past deficiencies.

## CONCLUSION:

This concern is unsubstantiated.

Based on this investigation, Craft Supervision did verify the process welders utilized to update qualifications, however they were not checking the welders competency to weld.

## Reference ERT Reports:

EX-85-042-004, IN-85-852-003, IN-85-740-009, IN-85-600-006,  
 IN-85-310-006, IN-85-480-004, IN-85-042-005, IN-85-335-002,  
 IN-85-249-X02, IN-85-113-003, IN-85-778-001, IN-85-815-001,  
 IN-85-021-X05, IN-85-503-001, IN-85-426-002, IN-85-770-003,  
 IN-85-612-006, IN-85-770-X07, IN-85-493-004, EX-85-021-002,  
 IN-85-532-005, IN-85-346-003, IN-86-143-002, IN-85-532-004,  
 IN-85-352-001, IN-85-770-002, IN-85-965-001, IN-85-424-X13,  
 IN-85-424-011, WI-85-003-001, IN-85-612-X07, IN-85-778-X07,  
 IN-85-543-002, IN-85-540-001, IN-85-835-002, IN-86-167-005,  
 IN-86-167-X06, WI-85-003-X02.

PREPARED BY

*Wm Kempf*2/5/86  
DATE

REVIEWED BY

*Ed Shaw*2/5/86  
DATE

*Accepted by  
 P. Brown / L. Hoffman  
 2-6-86*

**REQUEST FOR REPORTABILITY EVALUATION**

1. Request No. IN-86-167-004 (ERT Concern No.) \_\_\_\_\_ (ID No., if reported)
2. Identification of Item Involved: Welder Certification  
(Nomenclature, system, manuf., SN, Model, etc.)
3. Description of Problem (Attach related documents, photos, sketches, etc.)  
Personnel performing welder requalifications (updates) are not qualified to do so due to inexperience in welding activities.
4. Reason for Reportability: (Use supplemental sheets if necessary)
- A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_
- AND
- B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_
- OR
- C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_
- OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

OR

E. This deficiency represents a significant deviation from the performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: OD Sheu 365-4464  
ERT Group Manager Phone Ext.

OD Sheu 365-4464  
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

Ann P. Sullivan Date 2-6-80 Time 14:46  
Signed

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

TO: Lawrence Martin, Project Manager, LP6N47A-C

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: FEB 07 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is Report No. WI-85-029-002

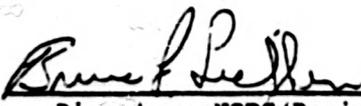
Subject Welds Inspection Deficiencies

Concern No. WI-85-029-002

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by March 7, 1986. Should you have any questions, please contact B. F. Siefken at telephone 6230-K.

Recommend Reportability Determination: Yes X No     

  
for Director, NSRS/Designee

BFS:JTH

Attachment

cc (Attachment):

- H. L. Abercrombie, SQN
- W. Bibb, BFN
- J. W. Coan, W9D135 C-K
- W. T. Cottle, WGN
- James P. Darling, BLN

- R. P. Denise, LP6N40A-C
- D. R. Nichols, E10A14 C-K
- QTC/ERT, Watts Bar Nuclear Plant
- E. K. Sliger, LP6N48A-C

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--Copy and Return--

TO : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: \_\_\_\_\_

Date: \_\_\_\_\_

I hereby acknowledge receipt of NSRS Report No. \_\_\_\_\_  
Subject \_\_\_\_\_ for action/disposition.



\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**NSRS RECOMMENDATIONS**

**EMPLOYEE CONCERN NUMBER: WI-85-029-002**

**Q-85-029-002-01: ADEQUACY OF INSTRUMENT SUPPORT WELDS**

**The adequacy of support welds for instrument lines should be addressed as a part of the generic welding review being performed by EG&G at Watts Bar Nuclear Plant.**

**Principally Prepared by Bruce F. Siefken.**



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Sweetwater, TN 37874

(615)365-4414

ERT INVESTIGATION REPORT

PAGE 1 OF 7

CONCERN NO: WI-85-029-002

CONCERN: Welds (AWS) inspection deficiencies for instrumentation supports have not been addressed: sampling reinspection program for other structural welds (pipe hangers, cable tray and conduit supports, etc) did not address instrument support welds installed during the same phase/period of construction. (Additional details available but withheld to maintain confidentiality).

INVESTIGATION

PERFORMED BY: James M. Sallee

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**DETAILS**

PERSONNEL CONTACTED: CONFIDENTIAL

**DOCUMENTS REVIEWED:**

1. Nonconforming Condition Reports:

- A. NCR 2375R  
Item Description: Cable Tray Supports, Conduit Supports,  
and Miscellaneous Steel
- B. NCR 3579R  
Item Description: Platforms, ladders and stairs in Cat.1  
structures erected and documented prior to  
Jan.1, 1981.
- C. NCR 4043R  
Item Description: All structural and miscellaneous steel  
except platforms, ladders and stairs  
(see NCR 3579R)

2. Correspondence:

- A. SWP 80-0708-028, dated July 8, 1980  
Subject: Nonconformance Report 2375R
- B. SWP 81-0917-044, dated September 16, 1981  
Subject: Watts Bar Nuclear Plant Units 1 and 2 - Cable  
tray supports Fillet Welds Sampling Program

CONCERN NO: WI-85-029-002

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**DETAILS, continued****DOCUMENTS REVIEWED, continued****2. Correspondence, continued**

- C. NEB 81-0909-260, dated September 9, 1981  
Subject: Watts Bar Nuclear Plant - Fillet  
Weld Sampling Program.
- D. WBN 81-0827-004, dated August 27, 1981  
Subject: Watts Bar Nuclear Plant - Nonconformance  
Report 3579R.
- E. SWP 81-0925-150, dated September 22, 1981  
Subject: Watts Bar Nuclear Plant - Nonconformance  
Report 3579R.
- F. SWP 82-0304-135, dated March 1, 1981  
Subject: Watts Bar Nuclear Plant - NCR's 2375R and  
3579R - Platform Configuration and Weld  
Quality Sampling Program.
- G. WBN 82-0309-017, dated March 9, 1982  
Subject: Watts Bar Nuclear Plant - Response to 10CFR50.55(e)  
item-NCR 3579R - Failure to erect platforms,  
ladders and stairs in accordance with applicable  
drawings.
- H. WBN 82-0317-003, dated March 17, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program-  
NCR's 3579R and 2375R.
- I. WBN 82-0329-016, dated March 29, 1981  
Subject: Watts Bar Nuclear Plant - Nonconformance Reports  
2375R and 3579R - Platform Configuration and Weld  
Quality Sampling Program.
- J. WBN 82-0616-003, dated June 16, 1982  
Subject: Watts Bar Nuclear - Status of Weld Quality Sampling  
Program - Reference NCR 2375R and Memorandum SWP  
820505 050.
- K. SWP 82-0826-153, dated August 26, 1982  
Subject: Watts Bar Nuclear Plant - Status of Weld Quality  
Sampling Program NCR's 2375R, 3579R, and 4093R.

CONCERN NO: WI-85-029-002

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**DETAILS, continued****DOCUMENTS REVIEWED, continued****2. Correspondence, continued**

- L. WBN 82-0614-002, dated June 14, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program - NCR's  
3569R and 2375R - Reference Memorandum SWP 820509  
050.
- M. WBN 82-0621-004, dated June 21, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program -  
NCR's 3579R and 2375R - Reference Memorandum  
SWP 820505 050.
- N. SWP 82-0622-050, dated June 22, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program  
-NCR's 3579R and 2375R - Reference Memorandum  
SWP 820505 050.
- O. WBN 82-0819-002, dated August 19, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program -  
NCR's 3579R and 2375R - Reference Memorandum  
SWP 820505 050.
- P. WBN 82-0927-019, dated September 27, 1985  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program -  
NCR's 3579R and 2375R - Reference Memorandum  
SWP 820505 050.
- Q. WBN 82-1223-001, dated December 23, 1982  
Subject: Watts Bar Nuclear Plant - Structural  
and Miscellaneous Steel - Weld Sampling  
Program - NCR 2375R.
- R. SWP 82-1012-043/82 1014A0120, dated October 12, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program  
NCR 2375R.

CONCERN NO: WI-85-029-002

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**DETAILS, continued****DOCUMENTS REVIEWED, continued****2. Correspondence, continued**

- S. SWP 82-1217-042, dated December 10, 1982  
Subject: Watts Bar Nuclear Plant Structural and  
Miscellaneous Steel NCR 2375R.
- T. SWP 82-0528-160, dated May 27, 1982  
Subject: Watts Bar Nuclear Plant - Nonconformance  
Report 4093R.
- U. WBN 82-0608-008, dated June 08, 1982  
Subject: Watts Bar Nuclear Plant Units 1 and 2-  
Undocumented Minor Modifications to Structural  
and Miscellaneous Steel - 10CFR50.55(e)  
NCR 4093R.
- V. SWP 82-0826-153, dated August 26, 1982  
Subject: Watts Bar Nuclear Plant - Status of Weld  
Quality Sampling Program NCR's 2375R, 3579R, and  
4093R.
- W. WBN 82-1007-003, dated October 17, 1982  
Subject: Watts Bar Nuclear Plant - Embedded Plate  
Discrepancy - 81-30 Program.
- X. SWP 82-0913-020, dated September 13, 1982  
Subject: Watts Bar Nuclear Plant -81-30 Program  
Embed Plate Discrepancy.
- Y. WBN 82-0506-001, dated May 6, 1982  
Subject: Watts Bar Nuclear Plant - Nonconformance  
Report 4093R.
- Z. WBN 82-0907-004, dated September 07, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel- Weld Sampling Program - NCR's  
3579R and 2375R - Reference Memorandum SQP 820505  
050.
- AA. SWP 82-0505-050, dated May 5, 1982  
Subject: Watts Bar Nuclear Plant - Structural and  
Miscellaneous Steel - Weld Sampling Program-  
NCR's 3579R and 2375R.

CONCERN NO: WI-85-029-002

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**DETAILS, continued****DOCUMENTS REVIEWED, continued****3. Drawings:**

18N203-1R10	18N215-5R1	18N225-3R1
18N203-2R10	18N215-6R1	18N241-R2
18N203-3R4	18N215-8R4	38N200-R4
18N215-1R6	18N215-9R1	38N201-R4
18N215-2R	18N215-14R8	38N203-R4
18N215-3R2	18N215-15R7	38N204-R4
18N215-4R4	18N221-R0	38N206-R6
38N208-R4	48W1226-12R7	
38N210-R5	48N1231-1R13	
38N211-R8	48N1231-2R10	
38N213-R5	48N1231-4R7	
38N214-R12	48N1241-R9	
38N215-R0	48N1276-6R8	
38N220-R3	48N1294-1R3	
44N235-R2	48N1294-3R6	
44N236-2R6	48W1354-1R3	
44N360-R5	48W1354-2R2	
44N373-R7	48W1352-3R3	
34N320-R4	48N1301-R0	
44W351-R4	48W1267-R8	
48N942-R13	48N1294-3R6	
48N941-R15	10N320-7R2	
489W945-R5	41N730-3R3	
48N918-R10	41N397-3R4	
48W953-1R5	41N397-4R2	
48W953-2R0	41W391-12R2	
48N1204R1	41W391-13R2	
48N1206-R1	41W391-14R5	
48W1211-1R9	41W391-15R3	
	41W391-16R2	

**4. Process Specification**

G-29C, Section 3.C.5.4, Rev. 2

CONCERN NO: WI-85-029-002

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**DETAILS, continued****SCOPE OF INVESTIGATION:**

1. Structure: Units 1 & 2, Reactor Building, Aux. Bldg, and Control Bldg.
2. Activity: Reinspection of weld quality on instrument support hangers.

**SUMMARY OF INVESTIGATION:**

This concern is substantiated.

This investigation was conducted during the period of January 8, 1986 to January 20, 1986. It included interviews of personnel and identification and review of various documents and records as they pertained to this investigation.

A review was conducted of the weld reinspection program, which was initiated as a result of NCR's 2019R, 2111R, 2375R and other nonconformances that identified discrepancies in the inspectors' training, qualification and subsequent ability to correctly perform inspections of completed welds to (VT) Visual Inspection requirements. (Generic investigation is underway)

All NCR's, their associated memorandums and drawings (Reference 1,2 and 3 of this report) and specific welds identified for reinspection were reviewed to determine the actual scope and type of welds (Structural, Hangers, Cable-tray supports, etc.) which were included in the reinspection program.

**FINDINGS:**

This concern is substantiated:

This investigation has not revealed any objective evidence that indicates instrument support welds were ever included within the scope of the documented reinspection program for weld quality of (AWS) welds previously accepted by unqualified inspection personnel.

CONCERN NO: WI-85-029-002

DETAILS, continued

OBSERVATIONS:

Notices of violation (10CFR50.55(e)) were filed with the USNRC as a direct result of nonconformities discovered during the reinspection for weld quality. Discrepancies in weld size, length, missing welds, etc., as were performed by various crafts and subsequently accepted by inspection prompted this action.

However, no such Notice of Violation has been issued as a result of deficiencies identified in NCR 2375R and other such documents regarding unqualified weld inspection personnel performing inspections that could adversely effect the safety of operations of the Nuclear Facility and represents a significant breakdown in the quality program for training of inspection personnel performing activities affecting quality.

PREPARED BY: MW Johnson for JAMES M. SALLIE 1/31/86  
DATE

REVIEWED BY: OT Thero 1/31/86  
DATE

Accepted by  
James M. Sallie  
2-6-86

**FINAL**

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. WI-85-029-002 (ERT Concern No.) (ID No., if reported)
2. Identification of Item Involved: Instrument Support Welds  
(Nomenclature, system, manuf., SN, Model, etc.)
3. Description of Problem (Attach related documents, photos, sketches, etc.)  
Inspection deficiencies for instrument support welds (AWS) has not been  
addressed as part of the weld sampling reinspection program. Sampling  
programs for structural, pipehangers, cable trays & conduit supports did not  
include instrument support welds installed during same phase/period of constr.
4. Reason for Reportability: (Use supplemental sheets if necessary)
- A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.  
No \_\_\_\_\_ Yes  If Yes, Explain: Could cause various system failures  
which adversely affect the safe operation of the facility.
- AND
- B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.  
No \_\_\_\_\_ Yes  If Yes, Explain: Could violate criterion 10 & 16
- OR
- C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_
- OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction of or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

OR

E. This deficiency represents a significant deviation from the performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.  
No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: *Bob Sheer* 365-4464  
ERT Group Manager Phone Ext.

*Mark* 365-4416  
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

*[Signature]* Date 2/5/86 Time 1538  
Signed

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO: W. T. Cottle, Site Director, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

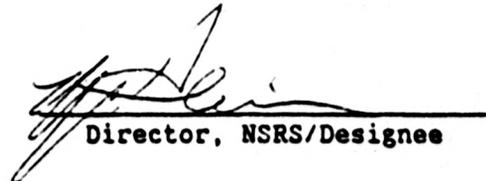
DATE: FEB 05 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-713-WBNSubject SNUBBER CONTROL AND HANDLINGConcern No. IN-85-288-001 and WI-85-091-014

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by March 5, 1986. Should you have any questions, please contact J. D. Gilbreath at telephone 3655-WBN.

Recommend Reportability Determination: Yes X No     


Director, NSRS/Designee

JDG:GDM

Attachment

cc (Attachment):

H. L. Abercrombie, SQN  
 W. Bibb, BFN  
 James P. Darling, BLN  
 R. P. Denise, LP6N40A-C

D. R. Nichols, E10A14 C-K  
 QTC/ERT, Watts Bar Nuclear Plant  
 E. K. Sliger, LP6N48A-C

-----  
--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: \_\_\_\_\_

Date: \_\_\_\_\_

I hereby acknowledge receipt of NSRS Report No. I-85-713-WBN  
 Subject SNUBBER CONTROL AND HANDLING for action/disposition.

\_\_\_\_\_  
Signature\_\_\_\_\_  
Date

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-713-WBN

EMPLOYEE CONCERNS IN-85-289-001 AND WI-85-091-014

MILESTONE 2

SUBJECT: SNUBBER CONTROL AND HANDLING

DATES OF INVESTIGATION: November 13, 1985-January 19, 1986

LEAD INVESTIGATOR:

  
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J. D. Gilbreath

2/3/86  
Date

INVESTIGATOR:

for   
-----  
T. O. Frizzell

2/3/86  
Date

REVIEWED BY:

  
-----  
A. D. Stevens

2/3/86  
Date

APPROVED BY:

  
-----  
A. Harrison

2/3/86  
Date

## I. BACKGROUND

NSRS has investigated Employee Concerns IN-85-288-001 and WI-85-091-014 which were communicated to the Quality Technology Company (QTC) in response to the Watts Bar Employee Concern Program. The specific concerns were expressed to QTC as follow.

### IN-85-288-001

Snubbers are not handled properly and are not adjusted and installed in accordance with the manufacturer's recommended practices of protecting them in waterproof coverings, storing and carrying them compressed, and adjusting their saddles only while they are held vertical.

### WI-85-091-014

TVA has very poor control over snubbers in the manner in which they are stored and handled. These expensive snubbers are frequently scrapped and later retrieved from the scrap yard for installation.

A check with QTC for additional information revealed that for WI-85-091-014 the concerned individual (CI) felt that better controls existed now than in the past. Regarding the scrapping and later use allegation, the CI indicated that laborers would pick up good snubbers and throw them in the trash. CONST would have to retrieve the snubbers before they could be installed.

## II. SCOPE

The scope of this investigation involved reviewing both the past and present requirements for storage, handling, and installation of snubbers; the implementation of those requirements; and reviewing the training modules prepared for presentation to the craft regarding snubber control.

During the course of this investigation, discussions were held with personnel in the Hanger Engineering Units, Free Test Section, the Mechanical Branch in the Division of Nuclear Services, and the CONST craft training instructors. In addition, formal interviews were conducted with craft personnel, and the following documents were reviewed.

- A. Pacific Scientific Document No. 141. "Instruction Manual for Installation and Maintenance of Mechanical Shock Arrestors," Revision 2, April 1980
- B. QCI-1.02, Revision 15. "Control of Nonconforming Items"
- C. QCI-1.36, Revisions 9, 10, and 11. "Storage and Housekeeping"
- D. QCI-1.56, Revision 9. "Work Packages"
- E. QCF-1.36, Revision 6. "Storage and Housekeeping"

E. An inspection of the warehouse and the Bergen-Patterson shop was conducted to observe storage conditions. While storage conditions for new snubbers was found in compliance with QCI-1.36, damaged snubbers were located in both storage areas and were neither tagged or segregated in distinctly marked areas. This is in conflict with Criterion XV of 10CFR50, Appendix B, which stipulates that measures must be established and implemented to control nonconforming items to prevent their inadvertent use or installation. The control measures are required to include identification (such as tagging) and segregation of the damaged material. When questioned as to how many damaged snubbers existed and whether a log book was kept, no information was available. Hanger Engineering subsequently took steps to consolidate all damaged snubbers in one location and record the serial numbers of each item. The results were:

63 PSA-1/4  
45 PSA-1/2  
7 PSA-1  
6 PSA-3  
3 PSA-35

All of these 125 snubbers had been damaged since November 1984, or in other words, within the last 15 months.

F. CONST Management was aware of the problem with snubber damage as early as 1979-1980 and considered various options for correcting the situation but did little until the mini-INFC review was conducted in late 1984. Procedural changes to QCP-1.36 and QCI-1.36 were made in June 1985, and the formalized training program for craft was established about the same time. However, failure to implement prompt corrective action to resolve the notable problem with snubber damage is clearly a violation of Criterion XVI of 10CFR50, Appendix B.

G. No procedures are included in the work packages for hanger installation relative to installing snubbers because there are no developed QCIs to cover this activity, and the PSA procedure has never been officially approved by OE for use as a reference document.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

A. From the discussions with CONST personnel and the supporting evidence of the large number of damaged snubbers, the concern regarding the handling and adjustments of snubbers is substantiated. However, a review of the manufacturer's procedures found no requirements for protecting snubbers in waterproof coverings or storing and carrying them compressed.

B. The procedural changes which were made have improved the storage conditions and traceability of operable snubbers. However, identification and segregation of damaged snubbers is seriously lacking. This is caused by a failure to apply the requirements of QCI-1.02, "Control of Nonconforming Items," to the entire process from receipt to installation.

- C. The continuing increase in the number of damaged snubbers indicates a failure to identify the root cause of the problems, again caused by the failure to implement QCI-1.02 for corrective action.
- D. Because there are no QCIs covering the installation of snubbers, the craft must rely on what they were taught in the training sessions, and the instructors must rely on Engineering to inform them of changes in the procedures.

### Recommendations

#### I-85-713-WBN-01 - Develop Quality Control Instruction

Develop a Quality Control Instruction delineating the requirements for handling and installation of snubbers.

#### I-85-713-WBN-02 - Identify and Control Damaged Snubbers

Establish measures to identify and control damaged snubbers. Apply the requirements of QCI-1.02.

#### I-85-713-WBN-03 - Conduct Generic Review

The CCNST QA organization should conduct a generic review of the applicability of the requirements of QCI-1.02 to components between the time they are issued from the warehouse and the time they are installed.

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

TO: W. C. Bibb, Site Director, Browns Ferry Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: FEB 11 1986

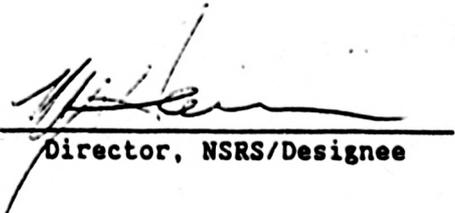
SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-379-BFNSubject INADEQUATE TRAINING OF CRAFTSMENConcern No. XX-85-016-001

and associated prioritized recommendations for your  
action/disposition.

It is requested that you respond to this report and the attached two  
Priority 2 [P2] recommendations by March 7, 1986. The Priority 3 [P3]  
recommendation will be looked at for corrective action follow through in  
August 1986. No response is required for [P3] items. Should you have any  
questions, please contact W. D. Stevens at telephone 6231-K

Recommend Reportability Determination: Yes  No

  
Director, NSRS/Designee

WDS:JTH

Attachment

cc (Attachment):

H. L. Abercrombie, SQN  
W. T. Cottle, WBN  
James P. Darling, BLN  
R. P. Denise, LP6N40A-C  
B. C. Morris, BFN  
D. R. Nichols, E10A14 C-K  
QTC/ERT, Watts Bar Nuclear Plant  
Eric Sliger, LP6N'9A-C



TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
INVESTIGATION REPORT NO. I-85-379-BFN  
EMPLOYEE CONCERN: XX-85-016-001

SUBJECT: INADEQUATE TRAINING OF CRAFTSMEN

DATES OF INVESTIGATION: SEPTEMBER 23, 1985 - DECEMBER 18, 1985

LEAD INVESTIGATOR:

Charles L. Breeding  
C. L. Breeding

1/29/86  
DATE

INVESTIGATOR:

N. T. Henrich  
N. T. Henrich

1/29/86  
DATE

REVIEWED BY:

M. W. Alexander  
M. W. Alexander

1/29/86  
DATE

APPROVED BY:

R. C. Sauer  
R. C. Sauer

1/31/86  
DATE

## I. BACKGROUND

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern received by Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-016-001, stated:

Browns Ferry Nuclear Plant, Units 2 & 3, Craft Personnel are not appropriately trained, nor are they provided appropriate procedures which provide specific technical instructions for performance of the work. For example Craft Personnel are not familiar with the mechanics of anchor bolt installation as defined by General Construction Specification G-32, Rev. 10, 4/1/85. Craft Personnel are only provided a copy of MAI-4, a modification procedure which provides general guidance and documentation applicable to the process of anchor bolt installation. Acceptance criteria utilized for anchor bolt inspection are contained in G-32, of which the craft do not have a controlled copy available in the work area. A similar instance was expressed relative to the performance of high potential and megger testing activities performed in accordance with MI-71. Electrical Craft Personnel are incapable of properly setting up and conducting these test activities due to a lack of training.

## II. SCOPE

- A. The scope of this investigation was determined from the stated concern of record to be that of three issues requiring investigation:
1. Inadequate anchor bolt test instructions.
  2. Inadequate electrical equipment test instructions.
  3. Inadequate training of craftsmen for anchor bolt pull test and electric equipment testing.
- B. NSRS reviewed craft training programs with emphasis on the examples given by the concerned individual. The adequacy of procedures provided for performance of modification and maintenance work was investigated. The type and adequacy of the technical instructions provided in the procedures was reviewed to determine if the instructions were clear and complete. Other examples of this type of alleged problem were searched for.

### III. SUMMARY OF FINDINGS

#### A. Requirements and Commitments

1. 10CFR50, Appendix B, criterion V, requires that all work is to be accomplished in accordance with written procedures.
2. ANSI N18.7-1976 "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," contains guidelines for writing proper procedures.
3. A letter from Zack Pate (INPO) to H. G. Parris dated April 15, 1985 (A02 850409 016) establishes schedules for training program accreditation at Browns Ferry (Ref. 9).

#### B. Findings

1. Installation of anchor bolts is well within the scope of what is expected of a journeyman craftsman. Procedures that describe in general anchor bolt installation and testing activities are available and required to be on each jobsite while work is underway.

However, there appears to be a weakness in anchor bolt pull test procedures. MAI-4 is the procedure used for anchor bolt installation. It does not contain detailed pull test requirements or acceptance criteria. MAI-4 relies on General Construction Specification G-32 (Ref. 3) for details of how much force to exert on anchor bolts during testing. Since the plant works to MAI-4, copies of G-32 are generally not available to craftsmen. This weakness has been recognized by BFN staff. A proposed revision to MAI-4 to include the appropriate detailed testing requirements and acceptance criteria has been proposed and is under review.

2. The investigation revealed that the only training provided to the craftsmen at Browns Ferry for testing of anchor bolts (covered by MAI-4) (Ref. 1) is that provided by other craftsmen and the vendors of anchor bolt tools and test equipment. This training is provided on a sporadic basis based on interviews conducted during the investigation and there is uncertainty as to its thoroughness, quality, and comprehension. No records of this training are kept and no tests are given.
3. Procedures for electric equipment testing are available and required to be on each jobsite while work is underway. As mentioned in the concern, this procedure is EMI-71 versus MI-71. This procedure appears to be technically adequate although there should be more detailed instructions for use of special equipment to test electrical equipment.

4. Journeymen electricians working in the area of electric equipment testing are expected to understand the use of electrical test equipment (covered by EMI-71) (Ref. 2). There is no formal training program at Browns Ferry to train electricians in the use of meggar, kelvin bridge, and high-pot test equipment. Only informal classes have been held with certain craftsmen to teach them the techniques involved in electric equipment testing. No records are kept of this training.
  
5. TVA has made a commitment to INPO (Ref. 9) to gain INPO accreditation of training programs for electrical and mechanical maintenance personnel. In developing these training programs, TVA is compiling a plant specific task list that describes the functions of the mechanical and electrical maintenance positions. Tasks that will be included in the program have been selected from this list. Training programs have already been developed at Browns Ferry for the Operations Area, Shift Technical Advisor, Instrument and Control Technician, Chemistry Technician, Radiological Protection Technician, and Technical Staff and Managers. These programs are in place and awaiting INPO Accreditation Team visit before receiving full accreditation. TVA has committed to have the electrical maintenance and mechanical training programs in place by July 1986.

The establishment of this training program requires that plant specific tasks be compared with existing training materials and that areas not currently taught in sufficient depth be identified. A qualified training staff will be selected and trained. They will develop new training materials with supporting objectives and performance standards where a major gap has been found. The success of this new training program will be evaluated by TVA and INPO to ensure it is adequate.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### A. Conclusions

This employee concern is substantiated for the following reasons:

1. Anchor bolt pull test instructions appear to be inadequate. Appropriately detailed procedures are not available to the craftsmen for testing anchor bolts. The current version of MAI-4 does not contain test values and acceptance criteria for pull tests that are available in G-32. Thus the procedure is not complete and cannot be used as the sole document to implement anchor bolt tests.

2. Electrical test instructions appear to be inadequate. Although EMI-71 is technically adequate as it is now written, the procedure for electric motor tests does not contain specific instructions in the use of equipment for meggar, kelvin bridge, and high-pot tests.
3. Training of craft personnel in the areas of anchor bolt testing and electric equipment testing at Browns Ferry is sporadic, unorganized, and informal.

A training program for electrical maintenance personnel is currently under development at Browns Ferry. TVA has committed to INPO to have this program accredited by July 1986. This program will give electrical maintenance personnel training in all phases of the work they are expected to carry out including motor testing. This concern will be addressed by this training, and it is recommended that electrical maintenance training be instituted as scheduled.

#### B. Recommendations

1. I-85-379-BFN-01, MAI-4 Revision

The proposed revision to MAI-4 should be completed and issued by the BFN site. A copy of the issued procedure should be sent to NSRS for review. [P2]

2. I-85-379-BFN-02, EMI-71 Revision

NSRS recommends that EMI-71 be revised to include more specific instructions in the use of special equipment for meggar, kelvin bridge, and high-pot testing. [P2]

3. I-85-379-BFN-03, Formal Maintenance Craftsmen Training Program

It is recommended that TVA continue with its program of meeting INPO training criteria and accreditation. This program should result in a formal training program for training of mechanical and electrical maintenance craftsmen. The implementation date of July 1986 will be tracked by NSRS. [P3]

Note: Revision of the above instructions should resolve the immediate training needs problem.

**DOCUMENTS REVIEWED IN INVESTIGATION I-85-379-BFN  
AND REFERENCES**

1. MAI-4, BFNP Standard Practice for bolt anchors set in concrete structures, dated July 16, 1985
2. EMI-71, BFNP Standard Practice for megger, bridge, and high potential testing of electrical equipment, dated November 9, 1984
3. TVA General Construction Specification G-32 (R10), for bolt anchors set in hardened concrete, dated September 9, 1985
4. MAI-4 draft revision, "BFNP Standard Practice for Bolt Anchors Set in Concrete"
5. INPO guidelines for electrical maintenance personnel qualification, Document Number GPG-07, Rev. 0, dated July 31, 1981
6. TVA General Construction Specification G-66 (R1), for installation, inspection, and testing of maxibolt undercut anchors, dated July 9, 1985
7. Civil design standard, "General Anchorage to Concrete," DS-C1.7.1 R3, dated July 5, 1985
8. 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings"
9. Letter from Zack T. Pate (INPO) to Hugh G. Parris dated April 5, 1985, on the subject of "Training Program Accreditation" (A02 850409 016)
10. American National Standard (ANSI) N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," approved February 19, 1976

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

TO: H. L. Abercrombie, Site Director, Sequoyah Nuclear Plant

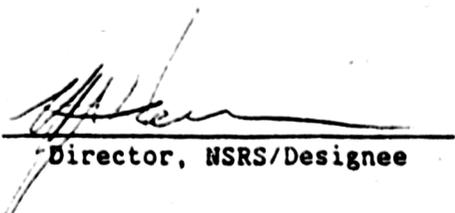
FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: FEB 11 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-695-SQNSubject IMPROPER ENGINEERING EVALUATION FOR  
PIPE AND SUPPORT DOCUMENTATIONSConcern No. XX-85-053-002

The attached report contains one Priority 3 [P3] recommendation which requires you to take some form of investigative or corrective action within the next four months (June 1, 1986). No formal response is required for this report unless you disagree with the proposed action. Please notify us if actions taken have been completed sooner. Should you have any questions, please contact W. D. Stevens at telephone 6231-K.

Recommend Reportability Determination: Yes  No 
  
 Director, NSRS/Designee

WDS:JTH

Attachment

cc (Attachment):

W. C. Bibb, BFN  
 W. T. Cottle, WBN  
 James P. Darling, BLN  
 R. P. Denise, LP6N40A-C  
 G. B. Kirk, SQN  
 D. R. Nichols, E10A14 C-K  
 QTC/ERT, Watts Bar Nuclear Plant  
 Eric Sliger, LP6N48A-C  
 J. H. Sullivan, SQN



TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-695-SQM

EMPLOYEE CONCERN: XX-85-053-002

SUBJECT: IMPROPER ENGINEERING EVALUATIONS FOR MISSING PIPE AND  
CONDUIT SUPPORT DOCUMENTATION

DATES OF INVESTIGATION: OCTOBER 23-30, 1985

INVESTIGATOR:

E. F. Harwell  
E. F. HARWELL

1/29/86  
DATE

REVIEWED BY:

L. E. Brock  
L. E. BROCK

1/29/86  
DATE

APPROVED BY:

R. C. Sauer  
R. C. SAUER

1/30/86  
DATE

## **I. BACKGROUND**

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern received by the Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request form from QTC and identified as XX-85-053-002, stated:

Sequoyah - Engineering Evaluations, for documentation missing on pipe supports and conduits supports, was not always done properly: Sometimes the hardware was not examined before the evaluation was made. E.g., in one case, the NRC found a hanger documented as bolted, but it was actually welded. Unit 1 - 1978 to 1980 - Aux., Control and Diesel Gen. Buildings.

Further information was requested from the ERT followup group, if available, but they did not have any additional information.

## **II. SCOPE**

- A. The scope of the investigation was determined from the stated concern to be two specific issues:
  - 1. For Sequoyah unit 1 during the timeframe of 1978 to 1980, the engineering evaluations performed to justify acceptance of previously installed pipe and conduit supports where documentation was missing were not always done properly.
  - 2. Hardware was not always examined before the evaluations were made.
- B. Construction specifications, construction procedures, inspection instructions, and standard operating procedures which governed the installation, inspection, documentation, and records review of the Sequoyah piping and conduit supports were reviewed. A random sampling of microfilm records of pipe and conduit supports, including universal printout and supporting inspection and evaluation records, were reviewed. Several people that were involved with either the design or installation of the supports were interviewed.

## **III. SUMMARY OF FINDINGS**

- A. Requirements and Commitments
  - 1. 10CFR50 Appendix B - Basis for QA program utilized at Sequoyah.
  - 2. CONST-QAP 17.1, "Quality Assurance Records."

3. Topical Report TVA-TR75-1, Section 17.1, "TVA Quality Assurance Program, Program Applicable to Design and Construction."

#### B. Findings

1. In 1977 the Sequoyah construction management revised procedures and instructions to utilize various computer programs as the method of indicating inspection, test, and operating status of plant features. This universal program provided a method of statusing inspections completed under previous procedures and provided acceptance based on documentation meeting 1977 requirements or based on an engineering evaluation performed per the guidelines of Standard Operating Procedure No. 551, "Past Records Review and Engineering Evaluations."
2. In implementing the universal program, construction procedures were revised to require all safety-related supports to be tagged or stamped with a unique identifier. Inspection and test status were entered into the universal program for each uniquely identified support. Where previous inspection and test records could be traced to an individual support and they met current requirements, these were identified by an asterisk on the universal program status. For those supports where previous inspection records could not be traced to an individual support or did not meet current requirements, an engineering evaluation was performed, and a dollar sign (\$) was entered on the universal program status.
3. Engineering evaluations were performed by reviewing existing records, log book entries, correspondence, notes on drawings, or a statistical acceptance by having sufficient inspection sheets for a lot area but not traceable to a particular support. The responsible engineering unit performed the evaluations and provided written justification of acceptance by a signed evaluation statement which was attached to the support record.
4. SNP Construction Procedure No. P-8, "Quality Assurance Records," was revised in 1977 to provide recognition that some previous inspection records were not always traceable to an individual support and may have not met the latest inspection requirements. Those records that were traceable had to be evaluated to determine if they met the latest requirements or licensing commitments. For those records which were not completely traceable, P-8 required that an engineering evaluation be performed to determine acceptability of the feature and provide evidence lending support for documentation. P-8 gave some general guidelines for performing the engineering evaluation, but the detailed method of performing the evaluation was found in Standard Operating Procedure No. 551, "Past Records Review and Engineering Evaluations."

5. Since the engineering evaluations were normally based on a review of existing records and other supporting documentation, P-8 and SOP 551 did not require an examination of supports prior to performing the evaluation; however, for structural welds, a notation on the support itself provided acceptable evidence that an inspection had been performed. When there was insufficient evidence to support an adequate evaluation of a feature, both P-8 and SOP 551 required reinspection or a nonconformance issued with disposition in accordance with established procedures.
6. SOP 551 required all evaluation statements and related documentation be sent to the Quality Control Record Unit (QCRU) for review and storage. P-8 required a detailed review and acceptance of records by noting with a "QA Record Review" stamp, reviewer's initials, and date. The QCRU would then record the receipt of acceptable QA records on the appropriate computer status program (universal printout).
7. Review of a random sample of universal printouts for conduit and piping supports revealed that most of the engineering evaluations were performed for the anchor tests. Since only a sampling of a lot was required by G-32 procedure, an anchor was not tested for each support. Therefore, the acceptance of anchors on most of the supports was based on a statistical acceptance of anchors in that defined lot in which the support was grouped. To a lesser degree, engineering evaluations were used for acceptance of the welding tests, but appeared to be related to lack of traceability of inspection records to a particular support. In reviewing the microfilm records of a random sample of evaluation statements, there were no detected cases where the evaluations were not done according to construction procedures.
8. As part of the unit i program to address IE Bulletin 79-02, a random sample of 139 expansion anchors was investigated. One failure (less than one percent) was found which correlated closely to the less than one percent failure rate associated with the G-32 construction testing (56 failures out of 8174 tested). The final inspection report submitted to the NRC drew a conclusion that these two samples confirmed a high confidence in the total anchor installation program. In addition, there is additional investigations and verification work presently under way as the result of the employee concerns XX-85-010-001 and XX-85-023-001. When this verification program and subsequent corrective actions are complete, this should provide an even higher confidence level since any problems found will require resolution.

9. In response to IE Bulletin 79-14, all unit 1 safety-related piping systems (2-1/2 inch pipe size and larger) were inspected for pipe run geometry; support and restraint design, location function, and clearance (including floor and wall penetration); embedments; pipe attachments; and valve and valve operator locations and weights. Approximately 4500 pipe supports were inspected under this program. Fifteen deficiencies were found which were of a serious safety concern. The remaining discrepancies, categorized as a minimal safety concern, were reanalyzed or otherwise corrected. Additional reviews are being done for the less than 2-1/2" piping supports as discussed in NSRS Report I-85-772-SQM, and others are planned as part of the program to address generic concerns. When these activities are complete, a higher confidence level should exist concerning the acceptability of pipe supports.
  
10. Concerning the conduit supports, a Condition Adverse to Quality Report (SCR SQM CEB 8502 R2) has been prepared stating that, "Programmatic deficiencies have been identified with the design and installation of seismically designed conduit supports as shown on the 47A056 drawing series of typical supports." The Sequoyah Engineering Project has performed a preliminary evaluation of the identified deficiencies and has concluded that most of them can be resolved by analysis and/or testing. When this effort is complete and appropriate corrective action taken (if required), then there should be a high confidence level that conduit supports installed in critical areas will perform to meet design loads.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### A. Conclusions

1. The concern that engineering evaluations were not always done properly was not substantiated for the following reasons:
  - a. No evidence was found that indicated that the evaluations were not performed and documented as required by approved construction procedures.
  - b. QC review of evaluation statements assured that adequate evidence or justification was provided as required by procedures prior to accepting the records and entering data on the computer status program.

2. The concern that the hardware (feature) was not always examined prior to performing the engineering evaluation was substantiated. However, the construction procedures did not require actual reexamination as part of the engineering evaluation but allowed the review of existing records and other evidence which would lend support to the evaluation. Absence of actual reexamination prior to evaluation was not a procedure violation.
3. The concern of record as a whole was not substantiated because the evaluations were performed by approved construction procedures. The results of the IE Bulletin 79-02 and 79-14 inspections and the degree of subsequently required corrective actions lend support to which confidence level achieved by the engineering evaluation process.

**B. Recommendations**

1. I-85-695-SQN, NSRS Followup to Plant Resolution of Civil Structure Questions

NSRS recommends that the Sequoyah plant staff continue their efforts concerning resolution of questions pertaining to anchor bolts (concern XX-85-023-001), base plates (XX-85-010-001), snubber installations (XX-85-070-007), and conduit supports (SCR SQM CEB 8502). NSRS will track these issues to assure that they are carried to satisfactory completion. [P3]

**DOCUMENTS REVIEWED IN INVESTIGATION I-85-695-SQM  
AND REFERENCES**

1. **SNP Construction Procedure No. P-8, Rev. 10, "Quality Assurance Records," dated August 24, 1976**
2. **SNP Construction Procedure No. P-24, Rev. 4, "Inspection and Test Status," dated November 12, 1980**
3. **SNP Construction Procedure No. P-30, Rev. 5, "Fabrication and Installation of Seismic Supports," dated May 26, 1981**
4. **SNP Standard Operating Procedure No. 102, Rev. 4, "Conduit Hanger Installations," dated April 21, 1982**
5. **SNP Standard Operating Procedure No. 551, Rev. 5, "Past Records Reviewed and Engineering Evaluations," dated August 14, 1979**
6. **General Construction Specification G-43, Rev. 8, "Support and Installation of Piping System in Category I Structures," dated August 8, 1985**
7. **SNP Inspection Instruction No. 66, Rev. 16, "Inspection of Supports," dated March 1, 1983**
8. **Report No. CEB-84, Sequoyah Nuclear Plant, Report on IE Bulletin 79-14 Inspection/Evaluation Programs**
9. **Microfilm Records (sampling) of Universal Printout and evaluation attachments for conduit and piping supports**
10. **SNP Construction Specification N2G-877, "Identification of Structures, Systems, and Components Covered by the Sequoyah Nuclear Plant Quality Assurance Program"**
11. **IE Bulletin No. 79-02, Rev. 2, "Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts," dated November 8, 1979**
12. **TVA letter, L. M. Mills to NRC, James P. O'Reilly, "Sequoyah Nuclear Plant Units 1 and 2 - Additional Information on IE Bulletin 79-02," dated January 2, 1980 (A27 810403 011)**
13. **TVA letter, L. M. Mills to NRC, James P. O'Reilly, "Sequoyah Nuclear Plant Units 1 and 2 - NRC - IE Bulletin 79-02 Final Report," dated April 3, 1981 (A27 810403 011)**

14. **Work Plan 4996 - Program for Verifying Correct Installation of Self-Drilling Type Concrete Anchors in Unit 1 Safety-Related Piping/Duct Supports for Response to NRC IE Bulletin 79-02**
15. **IE Bulletin 79-14, Rev. 1, with supplements through September 7, 1979 - "Seismic Analyses for As-Built Safety-Related Piping Systems"**
16. **SNP Construction Procedure No. C-8, Rev. 4, "Expansion Anchor Installation, Testing, and Documentation"**
17. **Condition Adverse to Quality Report, SCR SQM CEB 8502, Rev. 2, preliminary telecopied to plant on November 14, 1985**

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

TO: H. L. Abercrombie, Site Director, Sequoyah Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: FEB 07 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. XX-85-027-X07Subject SIGN-OFF ON DEFECTIVE EQUIPMENTConcern No. XX-85-027-X07

No response or corrective action is required for this report. It is being transmitted to you for information purposes only. Should you have any questions, please contact R. C. Sauer at telephone 2277.

Recommend Reportability Determination: Yes        No   X  



Director, NSRS/Designee

RCS:JTH

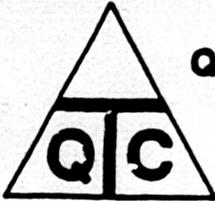
Attachment

cc (Attachment):

W. C. Bibb, BFN  
 W. T. Cottle, WBN  
 James P. Darling, BLN  
 R. P. Denise, LP6N40A-C  
 G. B. Kirk, SQN  
 D. R. Nichols, E10A14 C-K  
 QTC/ERT, Watts Bar Nuclear Plant  
 Eric Sliger, LP6N48A-C  
 J. H. Sullivan, SQN  
 W. E. Mason, E11C49 C-K--For review.

Principally prepared by R. C. Sauer.





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P.O. BOX 600

Sweetwater, TN 37874

(615)365-4414

ERT INVESTIGATION REPORT

PAGE 1 OF 2

CONCERN NO: XX-85-027-X07

CONCERN: "An inspector was requested by his supervisor to sign off data sheets on defective equipment. The inspector initially refused to sign because corrective action had not been taken. He was asked a second time to sign the data sheets and did so to avoid getting a letter for insubordination."

INVESTIGATION

PERFORMED BY: W. R. Pickering

---

DETAILS:

PERSONNEL CONTACTED: .

CONFIDENTIAL

DOCUMENTS REVIEWED:

Nonconformance Report #2803

Data Sheet #1 (II-19 Inspection) dated 6/18/82 through 10/3/83.

Inspection Instruction No.19 Revision 9 - (Battery Inspection)

Sequoyah Nuclear Plant Inspection Instruction No.30, Revision 7 (SNP II-30) - "Receipt Inspection"

SUMMARY:

This concern is not substantiated in that a requirement of Inspection Instruction 19 Revision 9 directs the inspector to signify acceptable corrective action after completion of that corrective action.

FINDINGS:

The subject data sheets are records of inspections in accordance with Inspection Instruction 19 Revision 9 "Battery Inspections". On 7/20/82 a Nonconformance Report was initiated identifying an unacceptable condition (high specific gravity) with the fifth diesel generator batteries. On 7/5/83 the inspector released the batteries from their nonconforming condition as evidenced by his signature in block 8 of the NCR.

Inspection Instruction 19 Section 9.0 "Documentation" states in part "...data sheets indicating unacceptable cells shall be forwarded to the Electrical Engineering Unit so that corrective action can be specified." The corrective action specified on the subject data sheets

CONCERN NO: XX-85-027-X07

DETAILS, continued

FINDINGS, continued

was to keep checking the electrolyte level of the batteries and the NCR was documented in the remarks section. Corrective action was completed between 7-20-82 and 7-5-83 and the subject data sheets documented the inspections performed between those dates. Section 9.0 "Documentation" of Inspection Instruction 19 also states in part "...Upon completion of the required corrective action, the cells shall be reinspected in accordance with Revision 9 of this instruction and are acceptable." Acceptance of corrective action is indicated by signature in the space provided.

The subject data sheets were signed and dated on 7/19/83. This is fourteen days after the inspector signified, as acceptable, the corrective action implemented by the NCR. This closed NCR provided evidence that the corrective action was acceptable and the subject data sheets provided evidence that the electrolyte level of the batteries were never found to be unacceptable. It does not appear to compromise the inspector nor the procedural requirements to signify on the data sheets what was previously identified on the NCR.

OBSERVATIONS:

(None)

CONCLUSION:

The requirement of Inspection Instruction 19 Revision 9 directs the inspector to signify acceptance of corrective action after corrective action is complete. The inspector signified such on the nonconformance report fourteen days prior to signing the subject data sheets. It is the conclusion of this investigation that pressure applied in excess of procedural requirements could not be substantiated.

PERFORMED BY: William R. P... ..

1-17-85  
DATE

REVIEWED BY: A. Thew

1/17/85  
DATE

*Reviewed & Accepted*  
*[Signature]*  
*2/3/85*

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. XX-85-027-X07 (ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)  
CI was requested by his supervisor to sign off data sheets on batteries for diesel generator he considered to be defective.

4. Reason for Reportability: (Use supplemental sheets if necessary)

A. This design or construction deficiency, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant.

No  Yes \_\_\_\_\_ If Yes, Explain:

AND

B. This deficiency represents a significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B.

No  Yes \_\_\_\_\_ If Yes, Explain:

OR

C. This deficiency represents a significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria bases stated in the safety analysis report or construction permit.

No  Yes \_\_\_\_\_ If Yes, Explain:

OR

REQUEST FOR REPORTABILITY EVALUATION

D. This deficiency represents a significant deficiency in construction or significant damage to a structure, system or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

-----

OR

E. This deficiency represents a significant deviation from the performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of the structure, system, or component to perform its intended safety function.

No  Yes \_\_\_\_\_ If Yes, Explain: \_\_\_\_\_

-----

IF ITEM 4A, AND 4B OR 4C OR 4D OR 4E ARE MARKED "YES", IMMEDIATELY HAND-CARRY THIS REQUEST AND SUPPORTING DOCUMENTATION TO NSRS.

This Condition was Identified by: DA Thero 365-4464  
ERT Group Manager Phone Ext.

[Signature] 365-4416  
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

RC Lauer Date 1/29/86 Time 1615  
Signed \_\_\_\_\_

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

TO: H. L. Abercrombie, Site Director, Sequoyah Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

DATE: FEB 11 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

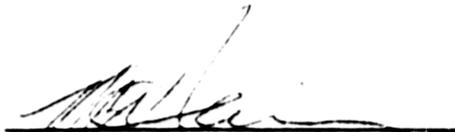
Transmitted herein is NSRS Report No. I-85-513-SQN

Subject WORK AREAS CONTAMINATED/LACK OF KNOWLEDGE OF SYSTEM CONTENTS

Concern No. XX-85-063-001

No response or corrective action is required for this report. It is being transmitted to you for information purposes only. Should you have any questions, please contact W. D. Stevens at telephone 6231.

Recommend Reportability Determination: Yes        No   X  

  
Director, NSRS/Designee

WDS:JTH

Attachment

cc (Attachment):

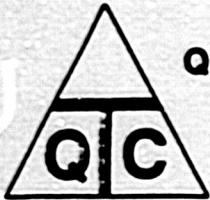
- W. C. Bibb, BFN
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- James P. Darling, BLN
- R. P. Denise, LP6N40A-C
- G. B. Kirk, SQN
- D. R. Nichols, E10A14 C-K
- QTC/ERT, Watts Bar Nuclear Plant
- Eric Sliger, LP6N48A-C
- J. H. Sullivan, SQN



TVA EMPLOYEE CONCERN PROGRAM  
WATTS BAR NUCLEAR PLANT  
NUCLEAR REGULATORY COMMISSION LISTING

QTC_NUMBER	SUBJECT	INVEST ORG	DATE REPORT	S U B ?	DATE RESPONSE	A C C ?	DATE INVEST CLOSED	KEY WORD	#
IN-85-052-001	DRWNGS & 050 NOTES	NSRS	07/03/85	.T.	01/14/86	F	/ /	HANGERS	1
IN-85-052-006	FIT-UP INSPECTIONS	NSRS	12/31/85	.T.	/ /		01/07/86	WELDING	1
IN-85-052-007	FITUP INSPECTIONS	NSRS	12/31/85	.T.	/ /		01/07/86	WELDING	1
IN-85-052-008	PROCED FOR WELD RODS	ERT	07/10/85	.T.	12/16/85	T	12/16/85	WELDING	1
IN-85-064-001	SPRAY ON SHUTDN BDS	NSRS	06/28/85	.T.	/ /		06/28/85	ELECTRICAL	1
IN-85-064-002	SHUTDN BDS TOP OPEN	NSRS	06/28/85	.T.	07/22/85	T	07/22/85	ELECTRICAL	1
IN-85-066-001	SEISMIC TRENCH CONCEN	ERT	01/28/86	.T.	/ /		/ /	CIVIL	1
IN-85-069-001	INADEQUATE INSPECTS	ERT	07/10/85	.T.	12/10/85	F	/ /	HANGERS	1
IN-85-078-001	UO/SAFTY RELATE SYST	NSRS	10/14/85	.F.	/ /		10/16/85	OPERATIONS	1
IN-85-086-001	STM GEN MATERIALS	ERT	07/10/85	.F.	/ /		07/10/85	MATERIAL	1
IN-85-088-001	VACUM TEST ON DOORS	ERT	07/09/85	.F.	/ /		07/09/85	TESTING	1
IN-85-091-001	LOST DOCUMENTATION	ERT	09/16/85	.T.	02/06/86	T	02/10/86	DOCUMENT	1
IN-85-091-X02	NO NCR FOR LOST DOCU	ERT	08/26/85	.T.	/ /		10/03/85	DOCUMENT	1
IN-85-103-001	IEB 79-02	NSRS	08/09/85	.T.	/ /		08/09/85	DESIGN	1
IN-85-106-001	MN STM LOADS SUPPORT	ERT	07/11/85	.F.	/ /		07/11/85	DESIGN	1
IN-85-108-001	SYS 68 PIPING	ERT	07/12/85	.F.	/ /		07/12/85	MATERIAL	1
IN-85-109-002	BOLTS REPLAC BY WELD	NSRS	11/07/85	.T.	01/08/86	T	01/22/86	WELDING	1
IN-85-113-003	WELDER CERTIFICATION	ERT	07/10/85	.T.	11/12/85	T	11/20/85	WELDING	1
IN-85-119-001	IMPROPER LINE INSTAL	ERT	09/18/85	.T.	10/22/85	T	10/30/85	INSTRUMENT	1
IN-85-130-001	UNQUILIFIED PERSONNE	ERT	09/28/85	.T.	12/26/85	T	02/03/86	CONSTRUCTI	1
IN-85-130-002	FIRE SEALS BREACHED	ERT	07/05/85	.T.	09/13/85	T	09/13/85	CONSTRUCTI	1
IN-85-134-001	CRIT NOT MET/IDSS WL	ERT	11/22/85	.F.	/ /		11/22/85	WELDING	1
IN-85-140-001	OPER WATCH VS PAPER	NSRS	08/30/85	.T.	10/16/85	T	10/16/85	OPERATIONS	1
IN-85-142-003	UNFOLLOWED WORK PLAN	NSRS	12/03/85	.T.	01/22/86	T	01/30/86	CONSTRUCTI	1
IN-85-160-001	UNREPORTED FIRE	NSRS	11/07/85	.F.	/ /		11/12/85	CONSTRUCTI	1
IN-85-160-002	UNQUALIFIED PERSONNE	NSRS	12/03/85	.F.	/ /		12/11/85	CONSTRUCTI	1
IN-85-169-001	SYS 62 VALVE CLASS	ERT	07/10/85	.T.	07/26/85	T	07/26/85	MATERIAL	1
IN-85-173-001	LEAK IN SPRINK SYS	ERT	08/13/85	.F.	/ /		08/13/85	MATERIAL	1
IN-85-186-002	INSL ON CONDT & CABL	ERT	07/10/85	.F.	09/24/85	T	10/10/85	ELECTRICAL	1
IN-85-186-004	BOARDS IN ELEC PANEL	ERT	07/05/85	.F.	09/23/85	T	09/23/85	ELECTRICAL	1
IN-85-189-002	ACCESS TO VALVES/#2	NSRS	10/04/85	.F.	/ /		10/04/85	DESIGN	1
IN-85-196-003	VALVE OPER INADEQ	ERT	08/24/85	.T.	11/25/85	T	12/10/85	OPERATIONS	1
IN-85-196-004	INPROP INSTAL PIPING	NSRS	10/11/85	.F.	/ /		10/16/85	MATERIAL	1
IN-85-198-001	UNCOVERED CABLE TRAY	NSRS	12/04/85	.T.	/ /		12/09/85	CON. TRUCTI	1
IN-85-202-001	CRACK IN WELD	ERT	07/10/85	.T.	/ /		07/09/85	WELDING	1
IN-85-207-002	USE OF FISH TAPE	NSRS	11/22/85	.T.	01/08/86		/ /	ELECTRICAL	1
IN-85-211-001	ERCW LINE LEAK	NSRS	06/27/85	.F.	/ /		06/27/85	MECHANICAL	1
IN-85-211-002	ERCW LINE NOT STAINL	NSRS	10/03/85	.F.	/ /		/ /	MECHANICAL	1
IN-85-212-001	INSP OF WELD SUPPORT	NSRS	01/07/86	.T.	/ /		/ /	WELDING	1
IN-85-216-001	WELDING SEQUENCE	ERT	07/10/85	.T.	08/05/85	F	/ /	WELDING	1
IN-85-217-001	CONDENS POTS, #1	ERT	07/15/85	.T.	/ /		07/14/85	DESIGN	1
IN-85-218-001	APPROVAL OF AS-BUILT	ERT	07/29/85	.T.	08/22/85	T	08/22/85	INSTRUMENT	1
IN-85-220-003	EXCESS NOS OF HGRS	NSRS	12/18/85	.F.	/ /		12/24/85	CIVIL	1
IN-85-221-001	IMPROPER VALVE OPER	ERT	07/05/85	.T.	09/23/85	T	09/23/85	OPERATIONS	1
IN-85-234-001	REQUIRE FOR WELD ROD	ERT	11/27/85	.T.	/ /		/ /	WELDING	1
IN-85-241-001	ANCHOR BOLT HOLES	NSRS	01/07/86	.T.	/ /		01/10/86	CIVIL	1
IN-85-246-001	INSUFFNT MOVEMT/NVR	NSRS	08/09/85	.F.	/ /		08/09/85	DESIGN	1





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Sweetwater, TN  
37874

ERT INVESTIGATION REPORT

PAGE 1 OF 15

CONCERN NO: IN-86-022-002, IN-86-022-X03

CONCERN: Unskilled craft personnel (Subjourneymen) were utilized for the purpose of performing independent verifications during WBNP-Unit 1 temporary alteration activities.

See "Details" below.

INVESTIGATION  
PERFORMED BY: K. M. Vadlamani

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DETAILS

Concern IN-86-022-02

Unskilled people (Subjourneymen) working on maintenance equipment and other items. Subjourneymen has signed-off as a craft inspector.

Concern IN-86-022-X03

Subjourneymen (Craft known) signed-off as a craft inspector. Falsification of documents.

Note: ERT file review indicated that this concern originated from WB-NucPwr Group and not WBN Construction Group.

PERSONNEL CONTACTED: CONFIDENTIAL

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

NRC

TO: W. T. Cottle, Site Director, Watts Bar Nuclear Plant

FROM: K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

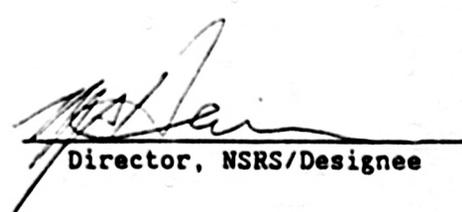
DATE: FEB 05 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-659-WBNSubject SELF-DRILLING EXPANSION ANCHORS OVERTORQUEDConcern No. IN-86-115-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by March 5, 1986. Should you have any questions, please contact J. H. Kincaid at telephone 2204.

Recommend Reportability Determination: Yes X No     
  
 Director, NSRS/Designee

JHK:GDM

Attachment

cc (Attachment):

H. L. Abercrombie, SQN

W. Bibb, BFN

James P. Darling, BLN

R. P. Denise, LP6N40A-C

D. R. Nichols, E10A14 C-K

QTC/ERT, Watts Bar Nuclear Plant

E. K. Sliger, LP6N48A-C

-----  
--Copy and Return--

To : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K

From: \_\_\_\_\_

Date: \_\_\_\_\_

I hereby acknowledge receipt of NSRS Report No. I-85-659-WBN  
 Subject SELF-DRILLING EXPANSION ANCHORS OVERTORQUED for  
 action/disposition.

\_\_\_\_\_  
Signature\_\_\_\_\_  
Date

- F. QCF-4.23-5. Revision 6. "Support Shock Suppressors"
- G. TVA Quality Assurance Topical Report (TVA-TR75-1A. Revision 8)
- H. QC QAPP-15. Revision 5. "Nonconforming Materials, Parts, or Components"
- I. NCM Section 10.2. Revision 21. "Nonconforming Items and Activities"
- J. Results of and Responses to Mini-Internal INFO Review related to snubbers

### III. SUMMARY OF FINDINGS

- A. At WEN, snubbers are received, inspected, and stored in warehouses 9 and 28 in yard 1. They are released from the warehouse by completion of a Form TVA 575 (575) by the craft foreman. The 575 is reviewed and verified by Hanger Engineering Unit B. Warehouse personnel record the snubber serial numbers on the 575 for all released snubbers. The snubbers are then transferred to the Bergen-Fatterson shop where they are kept until the craft is ready to install them. Once installed, inspected, and accepted, Attachment A to QCF-4.23-5 is routed through Hanger Engineering Unit B for data entry in a tracking program.
- B. There are no QCIs describing the handling and installation procedures to be followed by the craft. Their only instructions are provided through a formal training program and guidance given by their respective foreman. The formal training program, however, has only been in existence since mid-1985.
- C. Through formal interviews with craft personnel, it was determined that the training program has been successful in educating the craft in the proper handling procedures to be followed during installation. Discussions with training instructors revealed that the training modules are normally developed from the implementing QCIs. In the case of snubbers, the instructors must rely on Hanger Engineering and craft management for guidance in developing the modules.
- D. On November 2, 1984, 499 snubbers were returned to Bergen-Fatterson for repair. These had been accumulated since the beginning of plant construction. The large number of damaged snubbers was attributed to (1) damaged at receipt; (2) being stepped on (used as ladders); (3) inappropriate storage after issuance from warehouse (exposed to weather); and, (4) picked up and thrown in trash by cleanup crews. However, few specific records exist as to how each was damaged because NCRs were not initiated for most items. If a snubber is found damaged on receipt or is found damaged after it has been accepted in its installed condition by QC, then an NCR is initiated. If damaged between issuance from the warehouse and installation, no NCR is generated. When questioned as to this practice on when to initiate an NCR, CONST management responded that if a component has not been installed, then the nonconforming condition is not a safety problem, only an economic one because final inspection procedures will prevent acceptance of damaged components.