TVA 84 (08-9-69)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : H. G. Parris, Manager of Power & Engineering (Nuclear), 500A CST2-C

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

DATE : July 23, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-136-WBN

Subject Swinging Gate Striking Valve

Concern No. IN-85-411-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by August 6, 1985. Should you have any questions, please contact W. D. Stevens at telephone 6231.

Recommend Reportability Determination: Yes _____. No ✓

Director, NSRS/Designee

cc: W. F. Willis, E12316 C-K (5)
E. R. Ennis, WBN
R. M. Pierce, 9-169 SB-K
QTC/ERT, CONST-WBN

--Copy and Return--

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

Date: August 2, 1985

I hereby acknowledge receipt of NSRS Report No. I-85-136-WBN

Subject Swinging Gate Striking Valve

for action/disposition.

Jeanine May
Signature

8-2-85
Date

(Please copy entire page for return)

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

INVESTIGATION REPORT NO. I-85-136-WBN

MILESTONE 7 - UNIT 2 FUEL LOAD

SUBJECT: ERT CONCERN NO. IN-85-411-001, "SWINGING GATE STRIKING VALVE"

LEAD INVESTIGATOR: W D Stevens — W. D. STEVENS — DATE 7/22/85

INVESTIGATOR: R. C. Cutshaw — R. C. CUTSHAW — DATE 7/22/85

APPROVED BY: M. A. Harrison — M. A. HARRISON — DATE 7/23/85

FINAL

CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: I-85-136-WBN

SUBJECT: Swinging Gate Striking Valve

CONCERN NO: IN-85-411-001

[x] ACCEPT

[ ] ACCEPT WITH COMMENT

[ ] REJECT

Prepared By

Reviewed By 9/5/85

I. BACKGROUND

The employee concern as received from the ERT stated:

> "Individual had a concern about the safety hazard to the public and equipment at El. 729 Lines T15, T16 F&G Line on a platform of a small tank. A ladder leads to that platform with a swinging gate. When the gate opens, it strikes the valve which makes the valve open. It could be dangerous to the equipment and could damage valve."

II. SCOPE

The valve and swinging gate were physically located and visually inspected. The system number and unique identifier of the valve was obtained and other equipment that could be affected was evaluated for possible consequences on system operation and personnel safety.

III. SUMMARY OF FINDINGS

The valve was identified as 2-HCV-6-1679A which was an isolation valve for level switch (LS) 6-92B on moisture separator reheater (MSR) C-2 on the unit 2 side of the turbine building. The valve has a normally required open position and was located directly below LS-6-92B acting as the bottom isolation valve for the level column.

The swinging gate was the entrance to the platform below the C-2 MSR belly drain tank and struck the handwheel on the valve directly on the top of the handwheel whenever the swinging gate to the platform was opened fully. This could cause possible damage to the handwheel or valve stem if the force applied for opening was severe enough. Since LS-6-92B was located directly above the valve, the limit switch might also be affected causing an inadvertent annunciation in the control room or valve misoperation.

IV. CONCLUSIONS/RECOMMENDATIONS

Conclusion

This concern was substantiated in part as follows:

1. The swing gate located on the platform did strike the valve which would be dangerous to the equipment since the valve could be damaged or the limit switch operated inadvertently.

2. There appeared to be no danger to the public as stated in the employee concern since this was not an area open to the general public. If "public" refers to plant employees who would routinely have access to these plant areas, then it should be noted that this platform was approximately 20 feet above the normal floor elevation and would be visited infrequently.

3. The swing gate striking the valve did not appear to open the valve as stated in the employee concern. A more likely result would be to bend the valve stem or valve handwheel depending upon the amount of force applied by the gate to the top of the handwheel.

NSRS Recommendation: I-85-136-WBN-01, "Swinging Gate Rework"

1. The WBN PMO should initiate appropriate documentation and repairs to prevent the swinging gate from striking 2-HCU-6-1679A such as:

   a. Providing a "stop" on the gate to limit opening.

   b. Reworking the gate to eliminate the problem.

   c. Relocating the valve.

TVA 34 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

RWG.

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

DATE : August 7, 1985

SUBJECT: REQUEST FOR INVESTIGATION/EVALUATION

WATTS BAR NUCLEAR PLANT SITE DIRECTOR'S OFFICE AUG 08 '85

The attached employee concern is transmitted to you for investigation or evaluation in accordance with the provisions of the Employee Response Team Program.

QTC Concern No. I-85-136-WBN / IN-85-411-001

Status/Completion Due Date August 12, 1985

W J Cottle gm
H. G. Parris

WATTS BAR NUCLEAR PLANT SITE SERVICES OFFICE AUG 09 '85

	Note	Action	Reply
Tech Serv			
Re Engrg			
Cables & Site			
Proj Engrs			
Support Serv			
Admin Serv			
Dwgs & Vndr Mnls			
Materials			
Power Stores			
Health Station			
ADP			
XC to ARMS FILE			

TO : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

FROM : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant Power and Engineering (Nuclear)

DATE : AUG 26 1985

Attached is the requested response to QTC Concern No. IN-85-411-001.

E R Ennis
Signature

HBB:CDN:VCK

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

FROM : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

DATE : August 28, 1985

Attached is the requested response to QTC Concern No. IN-85-411-001.

W J Cottle
H. G. Parris

Evaluation/Investigation
By Power and Engineering (Nuclear)
Watts Bar Nuclear Plant
Mechanical Maintenance
Concern Number IN-85-411-001

The above referenced concern was investigated as stated below.

The location as indicated by the report was investigated by Mechanical Maintenance and determined to be valid as the concern indicates. However, the inspection did reveal that the gate would no longer open wide enough to strike the identified valve because a chain had been added to the gate to restrict its opening width.

In addition, Mechanical Maintenance inspected the same areas of unit 1 and found no problem with the platform gate striking any valve, however, this investigation did reveal that I-LT-65-52A could be struck by the gate. Although this would have no operational effect, the instrument's protective housing could possibly be damaged by excessive or repeated opening of the gate.

Mechanical Maintenance will take necessary corrective action to prevent this possibility. The corrective action will be tracked on MR A-504562 with an established completion date of October 1, 1985.

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-465-001

DATE OF PREPARATION: 9-16-85

CONCERN: Pipe Chase 713'- stainless steel lines 3/4" have no straps and pipe goes close to hanger (close to tank covered with blue insulation cloth) Unit 1.

INVESTIGATION PERFORMED BY: TVA NSRS

FINDING(S): Visual Inspection revealed four loose stainless steel lines in the vicinity of the boron injection tank (covered with blue insulation cloth) in Unit 1. Drawing No. 47A435-1-13 indicated that the four lines should have been secured by unistrut strap at hanger no. 47A345-1-13.

CORRECTIVE ACTION(S) Mechanical Maintenance will track the correction/repair of this item on MR A-533890. The estimated completion date is September 15, 1985. This disposition will include verification of the hanger status in the QC program and refinalization by QC or P&E (Nuclear).

CLOSURE STATEMENT: This concern was substantiated.

ERT Form Q

PRELIMINARY FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-465-001 _____
(ERT Concern No.) (ID No., if reported)

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

3. Description of Problem (Attach related documents, photos, sketches, etc.)
3/4" stainless steel lines close to hanger no straps.

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 __X__ 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 __X__ 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 __X__ Yes _____ If Yes, Explain:_____

OR

PRELIMINARY **FINAL**

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 __X__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 __X___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: W. T. Rubauch 365 4478
ERT Group Manager Phone Ext.

[signature] _____
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

[signature] Date 9/24/85 Time 1425
Signed

ERT Form M

CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO: I-85-174-WBN

SUBJECT: Unsecured Stainless Steel Lines

CONCERN NO: IN-85-465-001

[X] ACCEPT

[ ] ACCEPT WITH COMMENT

[ ] REJECT

Prepared By

Reviewed By 9/4/85

TVA 64 (OS 9-65) (OP-WP 7-84)
UNITED STATES GOVERNMENT

RWG.

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

FROM : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

DATE : August 7, 1985

SUBJECT: REQUEST FOR INVESTIGATION/EVALUATION

✓ MAH

WATTS BAR NUCLEAR PLANT SITE DIRECTOR'S OFFICE AUG 08 '85

The attached employee concern is transmitted to you for investigation or evaluation in accordance with the provisions of the Employee Response Team Program.

QTC Concern No. IN-85-174-WBN IN-SS-465-001

Status/Completion Due Date August 12, 1985

✓ JTH

W. J. Cottle
H. G. Parris JM

WATTS BAR NUCLEAR PLANT SITE SERVICES OFFICE AUG 09 '85

	Note	Action	Reply
Tech Serv			
Re Engrg			
Codes & Stds			
Proj Engrs			
Support Serv			
Admin Serv			
Dwg & Vndr Mnls			
Materials			
Power Stores			
Health Station			
ADP			
XC to ARMS FILE			

TO : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

FROM : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant Power and Engineering (Nuclear)

DATE : AUG 26 1985

Attached is the requested response to QTC Concern No. IN-85-465-001.

E Ennis
Signature

HBB:CDN:VCK

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

FROM : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

DATE : August 28, 1985

Attached is the requested response to QTC Concern No. IN-85-465-001.

W J Cottle
H. G. Parris

Evaluation/Investigation
By Power and Engineering (Nuclear)
Watts Bar Nuclear Plant
Mechanical Maintenance
Concern Number IN-85-465-001

The above concern was investigated by the Mechanical Maintenance Section and was substantiated as the report indicates.

Mechanical Maintenance will track the correction/repair of this item on MR A-533890. The estimated completion date is September 15, 1985. This disposition will include verification of the hanger status in the QC program and refinalization by QC or P&E (Nuclear).

TVA 64 (05-8-85)

Attachment 3

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : H. G. Parris, Manager of Power & Engineering (Nuclear), 500A CST2-C

FROM : K. W. Whitt, Director, Nuclear Safety Review Staff, E7B31 C-K

DATE : July 30, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-174-WBN

Subject Unsecured Stainless Steel Lines

Concern No. IN-85-465-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by August 13, 1985. Should you have any questions, please contact R. C. Cutshaw at telephone 2233.

Recommend Reportability Determination: Yes ____ No ✓

Director, NSRS/Designee

cc: E. R. Ennis, WBN
R. M. Pierce, 9-169 SB-K
QTC/ERT, CONST-WBN
W. F. Willis, E12B16 C-K (4)

--Copy and Return--

To: K. W. Whitt, Director of Nuclear Safety Review Staff, E7B31 C-K

From: H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

Date: August 2, 1985

I hereby acknowledge receipt of NSRS Report No. IN-85-465-001

Subject Unsecured Stainless Steel Lines

for action/disposition.

Signature Jeanine May Date 8-2-85

(Please copy entire page for return)

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

INVESTIGATION REPORT NO. I-85-174-WBN

ERT ITEM NO. IN-85-465-001

SUBJECT: UNSECURED STAINLESS STEEL LINES

LEAD INVESTIGATOR: G. G. Brantley G. G. BRANTLEY DATE 7/29/85

INVESTIGATOR: R. C. Cutshaw R. C. CUTSHAW DATE 7/29/85

APPROVED BY: M. A. Harrison M. A. HARRISON DATE 7/30/85

FINAL

I. BACKGROUND

An employee concern was received by the Quality Technology Company Employee Response Team that stated:

> Pipe chase 713' - stainless steel lines 3/4" have no straps and pipe goes close to hanger (close to tank covered with blue insulation cloth) unit 1.

II. SCOPE

The scope of this investigation was determined by the concern of record: to determine if there were unsecured stainless steel lines in the area in question.

III. SUMMARY OF FINDINGS

A. A visual inspection of the unit 1, elevation 713 pipe chase was made which revealed the following information:

1. The area did contain one blue insulation covered tank, the boron injection tank (BIT).

2. There were four stainless steel lines in the immediate vicinity (1-1/2 to 2 feet) of the BIT that were loose and struck hanger No. 47A435-1-13.

3. The four lines were identified as 1/2-inch stainless steel instrument lines leading to valves:

   a. 1-RTV 63-346A
   b. 1-RTV 63-347A
   c. 1-RTV 63-345A
   d. 1-RTV 63-348A

B. A review of hanger drawing No. 47A435-1-13 indicated that the four lines should have been secured by a unistrut strap at hanger No. 47A435-1-13.

IV. CONCLUSION AND RECOMMENDATION

I-85-174-WBN-01, Unsecured 1/2-Inch Stainless Steel Lines

A. Conclusion

The concern of record was substantiated in that the lines in question were not secured by the required unistrut at hanger No. 47A435-1-13.

B. Recommendation

Secure the four lines with the required supports.

REPO7:S

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-554-001

DATE OF PREPARATION: 9-16-85

CONCERN: Elev. 692', Unit 1, 1/4" stainless steel line runs from a control panel and out 50' to a dead end (line not connected to anything). End of line is taped over, not capped or plugged. CI feels that this line may be "important" and is obviously not complete. CI notified foreman (name unknown). No further details known.

INVESTIGATION PERFORMED BY: TVA NSRS

FINDING(S): Followup contact with the CI revealed that the line had been completed by the Nuclear Services Branch to the CI's satisfaction.

CORRECTIVE ACTION(S) None required

CLOSURE STATEMENT: This concern was not substantiated.

PRELIMINARY **FINAL**

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-554-001 _____
   (ERT Concern No.) (ID No., if reported)

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

3. Description of Problem (Attach related documents, photos, sketches,etc.)
   Elev. 692', Unit #1 Reactor Building, 1/4" stainless line runs from Control Panel to an unconnected end, with the end taped over.

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 __X__ 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 __X__ 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 __X__ Yes _____ If Yes, Explain:_____

   OR

PRELIMINARY **FINAL**

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 __X__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 __X___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: W. R. Rubaud 365-4428
ERT Group Manager Phone Ext.

W. Wm. A. Lake
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

Signed _____ Date 9/30/80 Time 0820

ERT Form M

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION NO. I-85-202-WBN

ERT ITEM NO. IN-85-554-001

MILESTONE 3 - 5 PERCENT POWER

SUBJECT: INCOMPLETE STAINLESS STEEL LINE

LEAD INVESTIGATOR: R. C. CUTSHAW — DATE: 9/3/85

INVESTIGATOR: F. J. SLAGLE — DATE: 9/3/85

APPROVED BY: M. A. HARRISON — DATE: 9/5/85

FINAL

I. BACKGROUND

A concern was received by the Quality Technology Company employee response team that stated:

> Elev. 692', unit 1, 1/4" stainless steel line runs from a control panel and out 50' to a dead end (line not connected to anything). End of line is taped over, not capped or plugged. CI feels that this line may not be "important" and is obviously not complete. CI notified foreman (name unknown). No further details known.

II. SCOPE

Prior to establishing the scope of this investigation, a request was made for additional information from the concerned individual (CI) through QTC. That request led to the resolution of the concern.

III. SUMMARY OF FINDINGS

Followup contact with the CI revealed that the line had been completed by the Nuclear Services Branch to the CI's satisfaction.

IV. CONCLUSIONS AND RECOMMENDATIONS

This concern was not substantiated based upon information provided by the CI that the line had been completed.

BUDGC:M

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. IN-85-021-002

DATE OF PREPARATION: 9-17-85

CONCERN: System 77 "hot" panel drains are routed into the floor drains instead of a closed tank.

INVESTIGATION PERFORMED BY: ERT

FINDING(S): The FSAR states in paragraph 9.3.3.4, "In the Auxiliary and Reactor Buildings only contaminated drain systems are provided."

Paragraph 9.3.3.3 states, "Most equipment drains in the Reactor Building are for tritiated deaerated liquids which are piped to the reactor coolant drain tank.

The rest of the floor drains and equipment drains are piped to the containment floor and equipment drain sump. The sump pumps automatically pump this liquid to the tritiated drain collector tank in the Auxiliary Building. If analysis shows the liquid is non-tritiated it can be pumped to the floor drain collector tank."

Paragraph 9.3.3.2.1 states, "In the Auxiliary Building, most equipment is located at an elevation which permits gravity feed into the desired drain collector tank. However, since the drain collector tanks are located on the lowest floor, the drains on this floor cannot be gravity fed to a drain collector tank. Therefore, there is a floor and equipment drain sump and a tritiated sump. The drains on this floor are piped to the floor and equipment drain sump onto the tritiated sump. These sumps are then pumped to their respective drain tanks."

CORRECTIVE ACTION(S) None required

CLOSURE STATEMENT: This concern was substantiated. However, the design of the Watts Bar Nuclear Plant is to collect process waste exactly as the concern stated.

QUALITY
TECHNOLOGY
COMPANY

P.O. BOX 600
Sweetwater, TN
37874

ERT EXTERNAL INVESTIGATION REPORT

CONCERN NO: IN-85-021-002

CONCERN: System 77 "hot" panel drains are routed into the floor drains instead of closed tank.

Investigation Performed By: Roger A. Bird

Reference:

IN-85-748-001

DETAILS:

This concern is substantiated. However, the design of Watts Bar Nuclear Plant is to collect process waste exactly as the concern stated.

The FSAR states in paragraph 9.3.3.4, "In the Auxiliary and Reactor Buildings only contaminated drain system are provided."

Paragraph 9.3.3.3 states, "Most equipment drains in the Reactor Building are for tritiated deaerated liquids which are piped to the reactor coolant drain tank.

The rest of the floor drains and equipment drains are piped to the containment floor and equipment drain sump. The sump pumps automatically pump this liquid to the tritiated drain collector tank in the Auxiliary Building. If analysis shows the liquid is non-tritiated it can be pumped to the floor drain collector tank."

Paragraph 9.3.3.2.1 states, "In the Auxiliary Building, most equipment is located at an elevation which permits gravity feed into the desired drain collector tank. However, since the drain collector tanks are located on the lowest floor, the drains on this floor cannot be gravity fed to a drain collector tank. Therefore, there is a floor and equipment drain sump and a tritiated sump. The drains on this floor are piped to the floor and equipment drain sump onto the tritiated sump. These sumps are then pumped to their respective drain tanks."

Prepared by Roger A. Bird 8-23-85
DATE

Reviewed by [signature] 8/23/85
DATE

Report Reviewed & Approved:
[signature]
8/30/85

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. IN-85-021-002 (ERT Concern No.) _____ (ID No., if reported)

2. Identification of Item Involved: System 77 (Nomenclature, system, manuf., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)

System 77 "hot" panel drains are routed into the floor drains instead of a closed tank.

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 X 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 X 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 X 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 X Yes ___ If Yes, Explain: _____

OR

E. This deficiency represents a significant deviation from 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 X 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: O B Thero — ERT Group Manager — 365-4464 Phone Ext.

O B Thero for — ERT Project Manager — 365-4414 Phone Ext.

Acknowledgment of receipt by NSRS

Signed _____ Date 9/3/85 Time 0839

ERT Form M

NRC

TVA 64 (05-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : G. Wadewitz, Project Manager, OC-Watts Bar Nuclear Plant

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

DATE : OCT 10 1985

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-311-008

SUBJECT : Fire Door Breaching Problem

CONCERN NO.: IN-85-311-008

(X) ACCEPT ( ) REJECT

( ) ACCEPT WITH COMMENT

Original signed by
M. S. Kidd
K. W. Whitt

Attachments
cc (Attachments):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B19 C-K (4)

10/11/85--JTH
cc: QTC/ERT, CONST, WBN--For response to employee.

0012U

NCR

TVA 64 (05-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant

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

DATE : OCT 10 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-403-WBN

Subject "Procedure Change Time Limit"

Concern No. IN-85-977-002

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by 10/24/85. Should you have any questions, please contact J. J. Knightly at telephone 128-615-365-4464.

Recommend Reportability Determination: Yes ____ No X

Director, NSRS/Designee

Attachment
cc(Attachment):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
QTC/ERT-WBN
W. F Willis E12B116 C-K (4)

--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. IN-85-977-002
Subject "Procedure Change Time Limit" for action/disposition.

_____ Signature

_____ Date

0011U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-403-WBN

Milestone 1 - Fuel Load

SUBJECT: ERT ITEM NO. IN-85-977-002

INVESTIGATOR: J. J. Knightly 10/3/85
J. J. Knightly Date

REVIEWER: P. B. Border 10/3/85
P. B. Border Date

APPROVED BY: M. A. Harrison 10/3/85
M. A. Harrison Date

DRAFT

I. BACKGROUND

The Nuclear Safety Review Staff (NSRS) investigated employee concern No. IN-85-977-002 which Quality Technology Company (QTC) had identified during the Watts Bar Employee Concern Program. The concern was worded as follows:

> Department (known) issues Temporary Changes (TCs) which are not always incorporated into Surveillance Instructions (SIs). This results in TCs sometimes being generated more than once, or SIs being held up while awaiting the incorporation of TCs. CI has no further information.

II. SCOPE

NSRS has reviewed the applicable requirements and administrative instructions, the logs for tracking and statusing surveillance instruction changes, a sampling of instruction changes maintained in the DCU master file, and copies of the surveillance instructions' manuals maintained at several WBN site locations. Additionally, a number of individuals responsible for preparing and performing surveillance instructions have been contacted to discuss implementing experience with the instruction changes and overall effectiveness of the instruction change process.

III. SUMMARY OF FINDINGS

A. Changes to PORC-reviewed plant instructions may be made using the Instruction Change Form (ICF, Appendix G of instruction WBN AI-3.1, "Plant Instructions - Control and Use"). This method of change is to be used when it is not feasible to await the normal processing of the Appendix C, Informal PORC Review form, or when the change is temporary. The necessity for the expedited WBN surveillance instruction change system was voiced in all interviews. This was because of the frequent changes to be expected in the implementing instructions for the plant technical specifications (tech spec) surveillance requirements during this time when the plant is preparing to begin operations and in the early plant operations phase. As operating experience is gained, the instructions are expected to stabilize with reduced use of the change forms.

B. WBN temporary changes, termed instruction changes, are cleared in one of four ways, as follows: (1) the reason for the change ceases; (2) it is determined that the change is unnecessary; (3) the change is incorporated into a permanent instruction; or, (4) the specified period of use has expired. Numerous instruction changes do not, and need not, become incorporated into permanent instructions.

C. A review of the corrective action reports (CARs) pertaining to surveillance instruction changes indicated that several nonconformances had been identified concerning aspects of the SI changes such as failure to affix instruction changes to the SI and failure to cancel superseded instructions, but no nonconformances

had been identified concerning the subject concern. A review of recent SI-related correspondence documented the high level of SI activity at WBN and identified one comment concerning failure to incorporate promptly an instruction change into the next-issued revision of the instruction.

D. Planning and Scheduling (P&S) is assigned the responsibility for tracking and scheduling each WBN instruction change. Because each instruction change is assigned a sequential number; e.g., 85-1, its status can be determined readily through reference to the WBN instruction change log. Copies of the log are distributed to the organizational units having change responsibilities, and copies were found to be available also at the Drawing Control Unit (DCU) and Scheduling Unit offices. The current instruction change log (dated September 18, 1985) statuses the 218 surveillance instruction changes presently in effect or cleared during recent months. Of the total, 65 changes had been cleared with an average elapsed time since issue date of less than one month. The remaining changes, numbering 153, were still open with average elapsed time since issue date of 4.1 months. Three changes had been open for more than 8 months. Earlier revisions of WBN AI-3.1 included a recommendation that "temporary changes requiring permanent revisions should be incorporated into permanent instructions within 30 days." One explanation given for dropping this provision in later revisions is that instructions specifying infrequent surveillance intervals, e.g., once every two years, should not have burdensome requirements for frequent revision. Additionally, the full performance of an instruction can require 30 days or more to complete. On the other side, the absence of a time requirement can suggest to some that incorporation of changes may wait as long as they wish.

E. In 39 instances, multiple instruction changes were found to be open for the same instruction. A complex example is Surveillance Instruction SI-3.1.17 (Reactor Coolant Flow) with 10 open instruction changes. Instruction SI-3.3.1 had 5, and SI-K610A had 6. It was recognized by interviewees that performance of an instruction with multiple changes sometimes can be frustrating and time consuming when the performer must work with both the instruction and the change paper. Issuance of the same instruction changes more than once during a time period was recognized as a possibility, but one which does not occur often. A sample review of the DCU instruction change files did not identify instances of this duplication. The review did find an instance when an open item was not incorporated into the next issued revision, but was instead left open (TC-85-207 dated 2/23/85 not included in Revision 5 of SI-1600 dated 4/9/85). One justification received was that a temporary change issued during the revision cycle could not be efficiently incorporated into that same revision because it would require starting over again with the typing, routing, and reviews.

F. Distribution of changes, requiring permanent revision, is made to Shift Engineer (SE), DCU, P&S, and to normally used instruction manual holders as listed by the originator on the instruction change form rather than distribution to all manual holders. As a consequence, various instruction manuals are somewhat different based on the extent to which instruction changes were received. This practice was explained on the basis that complete distribution would create a paper burden. For example, mechanical maintenance did not want to waste the time of electrical by distributing mechanical changes to them.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The facts of the employee's concern are substantiated in that multiple instruction changes are issued with time lags of several months before clearing. However, the safety-related concern is mitigated by findings that (1) instruction changes are to be expected at this phase of plant life and should decline in number later as operating experience is gained; and, (2) each instruction change is statused by Planning and Scheduling with appropriate distribution of status logs to responsible managers. Thus, information is available for section managers to expedite as needed the incorporation of instruction changes, and information from the log concerning the changes is available to any employee.

B. Recommendation

I-85-403-WBN-01 - "Procedure Change Time Limit"

To reduce undue delays in the incorporation of changes, it is recommended that WBN AI-3.1 specify an appropriate time limit for incorporating changes determined to be permanent into the respective instructions.

TVA 64 (05-9-65)

NRC

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : H. G. Parris, Manager of Power and Engineering (Nuclear), MR6N011 B-C

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

DATE : OCT 1 1 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. IN-85-130-001

Subject "Unskilled Personnel"

Concern No. IN-85-130-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by 11/6/85. Should you have any questions, please contact Ray Chappell at telephone 128-615-365-4464.

Recommend Reportability Determination: Yes ____ No X

Director, NSRS/Designee

Attachment
cc (Attachment):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
E. R. Ennis, NUC PR Watts Bar Nuclear Plant
QTC/ERT, Watts Bar Nuclear Plant
W. F. Willis, E12B116 C-K (4)

--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. IN-85-130-001
Subject "Unskilled Personnel" for action/disposition.

_____ _____
Signature Date

NSRS Recommendations: EX-85-010-002, PH-85-005-001, EX-85-008-001, EX-85-009-001, IN-85-556-001, IN-85-589-002, IN-85-705-001, EX-85-012-001, IN-85-130-001

1. Identify and assess impact on quality of journeyman-type work performed by unskilled, unsupervised subjourneymen.

2. Correct any adverse conditions identified in 1 above.

3. Implement controls to ensure that subjourneymen do not perform skilled tasks normally performed by journeymen until appropriate training has been conducted.

QUALITY TECHNOLOGY COMPANY

P.O. BOX 600
Sweetwater, TN
37874

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

CONCERN: SEE BELOW

INVESTIGATION
PERFORMED BY: Ray Chappell

DETAILS:

This report contains the findings derived from a generic investigation of the concerns listed below:

#EX-85-010-002

CONCERN: Subjourneymen (names given) are performing journeyman's work to include (running pipe, rebuilding valves, operating power eqiupment). Foreman (name given) said that subjourneymen could do anything the foreman feels he/she is qualified to do.

#PH-85-005-001

CONCERN: Possibility of subjourneymen performing journeymen's work in NucPwr, although individual had no personal knowledge of this, he stated that he thought this should be looked into and verified one way or another.

#EX-85-008-001

CONCERN: Subjourneymen used to do work that they are not qualified to do. They needn't have any specific training, but do work (eg. pipe fit-ups and welds on 1/4" lines) normally done by a journeyman with 5 years minimum experience. Subjourneymen require closer technical supervision than TVA provides. When craft complain, they are "chewed out" beyond all reasonable limits.

#EX-85-009-001

CONCERN: Using subjourneymen to do journeyman work in several different areas on the job possibly could lead to substandard work all over the job.

#IN-85-556-001

CONCERN: Subjourneymen allowed to grind, fit, weld, disassembl. valves; used basically as journeymen.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

#IN-85-589-002

CONCERN: Power division is using subjourneyman level craft personnel to perform welding, wiring and other operations which require a certified trained journeyman to perform properly. All crafts were alleged to be involved in this practice.

#IN-85-705-001

CONCERN: Unqualified personnel (subjourneymen)performing journeyman's work (terminations) in the control room, unit 1.

#EX-85-012-001

CONCERN: Watts Bar subjourneymen are doing the work of qualified fitters. Per C/I subjourneymen are not craftsmen and they do not have training as qualified fitters. 6 or 8 subjourneymen are doing the work of fitters in nuclear power maintenance department. (no names given).

#IN-85-130-001

CONCERN: Pipefitters using "subjourneymen" to perform work that only journeymen are qualified to do. This involves using power tools. This happened within the last three (3) weeks (April-May 1985) in Unit 1 - mechanical maintenance section.

Personnel Contacted: Confidential

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

Documents Reviewed:
Memorandum from: H. H. Mull, Manager of Construction, dated 3/26/82, (Doc. 820329003)to: J.E. Wilkins, Project Manager
Guidelines for Selection of Craft Subjourneymen, dated 3/15/82
Labor Agreement, dated 12/30/83

A substantial number of concerns have been received regarding subjourneymen performing the job functions normally performed by qualified journeymen. Concerned individuals identified subjourneymen in several crafts, including NucPwr maintenance, performing work activities such as, welding, grinding, terminations, valve repairs, threading, bending, pipe fitting, and the use of power tools in general.

FINDINGS:

The investigation of these concerns addressed the following:

A) Type of work being performed by subjourneymen.
B) Violations of the Labor Agreement.
C) Potential Safety hazards to subjourneymen
D) Potential quality impact of subjourneymen performing journeymen work.

A) ERT performed a walkdown of Units One (1) and Two (2) and observed journeymen and subjourneymen that were assigned to various crafts, including NucPwr maintenance. During the walkdown these personnel were observed, and questioned regarding their classification. (Journeymen, subjourneymen) and assigned department (Craft, maintenance). Subjourneymen were questioned regarding the type of work they had previously performed since being employed as a subjourneymen.

NOTE: Subjourneymen in maintenance cannot be readily identified since the "green stripe" worn on the crafts hard hats,that identify them as subjourneymen, are not worn on maintenance hard hats.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN 85-130-001

DETAILS,coninued

In addition to the walkdown, interviews were held with various foremen, journeymen, and subjourneymen at the ERT center. Following are the general subjects covered:

a) Tools used by subjourneymen
b) Type of work performed by subjourneymen
c) Safety
d) Job requirements for subjourneymen, and
e) Qualification requirments for subjourneymen.

As a result of visual observations and interviews performed during the ERT walkdown, and the formal interviews, the following was verified:

Subjourneymen are, in fact, using power and hand tools and performing journeymen job responsibilities. Examples of tools used, and work performed by subjourneymen are:

* Grinders
* Drills
* Pipe threaders (hand and power)
* Power band saws
* Air driven power tools
* Hand tools consisting of: Hammers, side cutters, hack saws, rachet and sockets, pliars, wrenches (pipe, crescent, and open/box end), crimping tools, wire stripers, screw drivers, and punches.

Work being performed by subjourneymen using the above listed tools is as follows:

* Various grinding operations
* Drilling holes
* Pipe and conduit bending (hand and power)
* Pipe threadinig (hand and power)
* Air impact wrench (removing studs off spears, installation and removal of nuts and studs)
* Bolting up hangers and support angles
* Assembling conduit

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

* Assembling HVAC duct
* Assembling and disassembly of pipe spools
* Removing air conditioners from wall
* Hooking up lavatories
* Pulling cables
* Sealing conduit penetrations
* Fire proofing cables
* Valve repair
* Attaching rigging and handling material
* Cable terminations

All personnel interviewed were questioned regarding the amount of safety training they had received since being employed by TVA. The following responses were received:

* No formal safety training program provided.
* The only training received is during the Monday morning safety meeting held by the foreman.
* Journeymen normally look after subjourneymen in pointing out the "do's" and "don'ts" in safety.
* It is up to the individual to work in a safe manner, and be aware of safety hazards.
* Personnel working here should have enough experience to identify safety hazards.

All subjourneymen interviewed were questioned regarding their job requirements, and qualifications of a subjourneyman. The following responses were received:

* Most of the subjourneymen stated that they were not supposed to use power tools, but were suppose to provide support to the journeymen, (going for material, tools, helping hold things) however, they could use hand tools.

* Some responded by stating they were not suppose to use any type of tools, they were only to be runners for material and tools.

* Many of the subjourneymen stated they could do anything their journeyman or foreman instructed them to do.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, [illegible]-85-012-001, IN-85-130-001

DETAILS,continued

In questioning the subjourneymen regarding qualification requirements, the following responses were received:

* Some subjourneymen did not know, or remember what the requirements were.

* Most of the subjourneymen stated 90 days of some type of construction experience.

(B) Review of the "Labor agreement", and support documents, (construction only) revealed the following:

(a) "These council classifications perform the unskilled duties of the craft in order to free the journeyman craftsmen to utilize their technical expertise on the more complicated work".

This investigation has shown that TVA management/supervision is not directing subjourneymen work activities within the contract guidelines. The subjourneymen are not being limited to "unskilled" duties.

ERT interprets "unskilled" duties to be those that do not affect the fit, form, or function of the material, component, equipment or system.

ERT does not consider many of the duties being performed by subjourneymen, (pipe & conduit bending, threading, assembly, fire proofing, electrical terminations, etc.) to be unskilled duties.

Although the specific job duties of the subjourneymen are not delineated in the contract, It is not believe that the intent of the contract was to allow subjourneymen to be used for any type of work (skilled, power tool use).

(b) "They shall be sufficiently experienced and qualified to enable them to perform assigned work in a competent and safe manner."

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued
(B) continued

(c) "Candidates for subjourneyman positions shall have at least three months experience in commercial, industrial or construction type work or have equivalent vocational or technical training. Subjourneymen must be capable of performing safely and competently a wide variety of unskilled duties of the craft."

A selected review of several subjourneymen personnel files verified that when they were hired, their previous experience did not meet the minimum requiremenst as stated above. Interpretation of qualifications and experience was treated in its most liberal sense.

The two (2) primary reasons for initiating the classification of the subjourneyman are:

1) Much of the work traditionally performed by skilled craftsmen does not require the full skills of their trade. (transporting tools, material, paperwork, assisting the journeyman in holding things, etc.).

2) Since wage rates for these classifications are substantially below those for journeymen; consequently, use of these employees would mean a cost savings.

(d) Mr. Horace H. Mull's memo dated March 26, 1982, states "appointments to these positions will not exceed 11 months and 29 days". The labor relations group informed ERT that the reason for the time limitation, was that subjourneymen were considered temporary personnel, and they could not be retained past one (1) year. Until recently subjourneymen were being layed off, and then rehired within a few days to enable them to

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued
(B), continued

(d) continued

work another year. TVA management has classified them as a #62, which means they ar still not permanent employees, but their length of employment is indefinite. However, these employees are still classified as "subjourneymen". If managements position on this matter has changed, clarification in writing is necessary to eliminate the violation of the originally established guidelines.

(e) Mr. Horace H. Mull's memo dated March 26, 1982 states "these employees will not use power tools". Investigation of this requirement has verified that subjourneymen are using many types of power tools, in the performance of their daily job requirements. Again, most of the subjourneymen are not experienced in the use of the various type of power tools they are using, causing a potential for the subjourneymen, journeymen and other personnel to receive unwarranted injuries. There is also a potential for damaging material and equipment through the improper use of power tools.

(C) Verification of various subjourneymen's limited background experience, and the lack of a formal safety training program for subjourneymen when they are employed, constitutes a potential for the following safety hazards.

(a) Subjourneymen with no actual jobsite experience, or formal safety training of how to safely conduct themselves on a jobsite such as (how to correctly lift material, identify whether a ladder or scaffolding is safe to climb, correct method of climbing up and down a ladder, use of safety belt, etc.) could potentially result in a fatal injury.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

(C) continued

(b) Subjourneymen who do not have previous jobsite experience, or have not been formally indoctrinated in the method of moving around material/equipment installations, not only have the potential of injuring themselves, but could potentially damage the completed installations, such as:

* Stepping on instrument tubing causing it to collapse, or leak during operation.

* Stepping on electrical conduit and damaging the conduit or possibly damaging the terminations, switches, etc.

* Dropping material and damaging other equipment.

(D) In addition to the potential quality impact of subjourneymen not being trained, or qualified in jobsite activities, the use of subjourneymen in the performance of journeymen work exhibits a high potential for quality to be jeopardized due to the following:

* Subjourneymen are not adequately trained to perfrom specific job functions.

* A journeyman working with the subjourneyman he may not see all the errors that are being made by the subjourneymen.

* Final inspection will not always identify the errors made by the subjourneymen.

* Unqualified subjourneymen performing journeymen work could potentially install the wrong material, or install material/equipment incorrectly.

Note:

There are occasions when the subjourneymen have worked unsupervised. The personnel interviewed, (Foremen, Journeymen, Subjourneymen) confirmed that during work activities the subjourneymen, for the majority of the time, are under the direct supervision of the journeyman.

2

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

(D) continued

Review and investigation of the job description and responsibilities for subjourneymen that are employed in NucPwr maintenance revealed the following:

ERT was informed by labor relations that subjourneymen working in NucPwr maintenance are called by different titles depending on the craft they are assigned to. An example of these titles are boilermaker helper, bricklayer improver, machinist helper, painter utilityman, etc. A review of various personnel files for minimum qualification requirements found them to be satisfactory.

Although the subjourneymen are to have a general knowledge of safe and proper use of handtools, the subjourneyman are not allowed to perform task that require the skills of a journeyman.

Maintenance supervision stated that subjourneymen are not allowed to perform any work that affects the quality of the material/equipment and that subjourneymen never work alone, they always work with a journeyman.

There is no written contractual agreement that restricts subjourneymen in NucPwr maintenance from using power tools. However, ERT was informed by Nuc Pwr that the subjourneymen are restricted to the use of hand type power tools (drills, grinders, air wrenches, etc.). Electrical maintenance stated that their subjourneymen were not allowed to operate such things as overhead cranes, power buckets, etc.

ERT was also informed by Nuc Pwr that when journeymen and subjourneymen are hired they are given a "safety orientation" to familiarize them with plant operation.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

OBSERVATIONS:

After reviewing the contractual requirements for construciton and NucPwr maintenance, and interviewing various craft and supervisory personnel, the following observations were made.

a) The subjourneyman's duties and responsibilities in construction is considerably different from those in NucPwr maintenance, which causes confusion within the craft and supervision.

b) There are no clear, concise job duties and responsibilities documented for each trade, including maintenance.

c) There are various interpretations of what constitutes a power tool.

d) There are various interpretations of what constitutes unskilled vs. skilled job functions.

e) The qualification requirements for subjourneymen are substantally different for construction vs. maintenance, although both are to perform the unskilled duties of the craft, and belong to the same union.

CONCLUSIONS:

This concern is substantiated.

The ERT investigation did not attempt to verify, or inspect the quality of work completed by the subjourneymen. The ERT did not identify any specific quality deficiencies resulting from work that was performed by subjourneymen. Although completed work is inspected and accepted by QC, there is a potential for substandard work to go undetected; therefore, the work activities that were performed by subjourneymen should be reviewed by TVA to identify potential impact to quality.

Basis:

1) Subjourneymen are using power tools.

2) Subjourneymen are performing work normally performed by skilled journeymen.

CONCERN NO: EX-85-010-002, PH-85-005-001, EX-85-008-001
EX-85-009-001, IN-85-556-001, IN-85-589-002,
IN-85-705-001, EX-85-012-001, IN-85-130-001

DETAILS,continued

CONCLUSIONS,continued

3) Deleted

4) When unskilled subjourneymen use power tools the potential exists for personal injury, or damaging installed material/equipment.

5) Employing subjourneymen that do not have jobsite construction experience provides a potential for personal injury and/or damage to installed material/equipment, especially since no formal safety training program exists for subjourneymen.

6) Deleted

PREPARED BY R. Chappell 9-28-85
DATE

REVIEWED BY [signature] 9/28/85
DATE

Report Reviewed & Accepted.
[signature]
10/2/85
NSRS

NRC

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : G. Wadewitz, Project Manager, Watts Bar Nuclear Plant

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

DATE : OCT 11 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-465-WBN

Subject "Water in Conduit and Junction Boxes"

Concern No. IN-86-119-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by 11/8/85. Should you have any questions, please contact P. R. Bevil at telephone 126-143-3731.

Recommend Reportability Determination: Yes X No ____

Original signed by
M. S. Kidd

Director, NSRS/Designee

Attachment
cc (Attachment):
- J. W. Coan, P-104 SB-K
- H. N. Culver, W12A19 C-K
- E. R. Ennis, NUC PR Watts Bar Nuclear Plant
- QTC/ERT, Watts Bar Nuclear Plant
- W. F. Willis, E12B116 C-K (4)

--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. IN-86-119-001 Subject "Water in Conduit and Junction Boxes" for action/disposition.

Signature Date

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-465-WBN

EMPLOYEE CONCERN IN-86-119-001

MILESTONE 3

SUBJECT: WATER IN CONDUIT AND JUNCTION BOXES

DATES OF INVESTIGATION: September 23-October 2, 1985

LEAD INVESTIGATOR:	G. R.Owens G. R. Owens	10/8/85 Date
INVESTIGATOR:	P. R. Bevil P. R. Bevil	10/8/85 Date
REVIEWED BY:	P. B. Border P. B. Border	10/8/85 Date
APPROVED BY:	M. A. Harrison M. A. Harrison	10/9/85 Date

DRAFT

I. BACKGROUND

A concern was received by Quality Technology Company Employee Response Team that stated:

> In tunnel between Reactor Bldg #2 and Cooling Tower, 6-8 conduits (junctions boxes and couplings) gushes water whenever it rains. Cables have already been pulled through the conduits. Manhole to tunnel is located between the 2 tanks located in front of Reactor Building #2.

II. SCOPE

A personal inspection was made of the concerned area, interviews were conducted with cognizant personnel, and design drawings were reviewed in order to evaluate the concern of record.

III. SUMMARY OF FINDINGS

A. The conduits and junction box addressed by this concern were observed by the lead investigator in the Primary Makeup and Refueling Water Pipe Tunnel. The location of the conduits and junction box is shown on electrical conduit and grounding drawing 15W810-21 at coordinate E8. The observation was conducted on a rainy day, and water was observed dripping out of junction box 2-JB-299-4471 because of water entering via two electrical conduits, 2PLC138 and 2PLC139. Leakage around the conduit couplings was also observed. These two conduits enter the pipe tunnel wall from the Refueling Water Storage Tank (RWST) area. In the immediate vicinity the following conduits also penetrate the wall: 2PLC64, 2PLC66, 2PLC67, 2PLC68, 2PLC72, 2PLC74, 2PLC76, 2PLC60F, and 2PLC61D. The only moisture observed on the other conduits was on 2PLC60F and 2PLC61D. (Their labels indicated they were the only safety-grade conduits in the immediate area.)

B. The following design drawings were reviewed: 15W810-30, -44, 45W2635-76, -92, 47W600-241, -296, and 47W611-63-2. The drawings indicate the circuits in the two nonsafety-grade conduits are response-time testing circuits for reactor Unit 2. These circuits are not planned for continual use, but for occasional testing. The safety-grade circuits are used to transmit signals from two of the four RWST level transmitters and are vital circuits used for safe shutdown of reactor Unit 2.

C. Observations at the base of the RWST revealed one of the level transmitter panel boxes, 2-L-344, was open and accumulating water due to the rain. Two conduits enter the bottom of the box and take on water as the rain accumulates in the open box.

D. In discussions with cognizant personnel, it was learned the cables have been permanently installed in the conduits, but the box was open because a temporary configuration for this one transmitter had been implemented. The temporary configuration consisted of the transmitter being mounted on some unistrut outside of the box. (The personnel recognized the need to prevent water from entering the conduits in this temporary configuration and planned to initiate corrective action after the problem was identified.)

E. According to notes A and C on design drawings 15810-30 and -44, respectively, the conduits at the RWST were to be sealed watertight after the cables were installed.

F. According to personnel discussions, the cables in question were not specified for submergence or excessive wetting, but can handle occasional wettings without significant deterioration to the cable insulation.

G. Observation of the conduits in the pipe tunnel revealed that openings in the two safety-grade conduits existed allowing the water to drain through the conduits. It appeared the two nonsafety-grade conduits were routed in such a way as to trap water in a portion of the conduit.

H. The junction box (4471) was observed mounted to the tunnel ceiling with the cover removed. The terminal block was mounted on the ceiling side of the box. Therefore, the terminal block was not exposed to the water.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

1. The concern of record was (partially) substantiated regarding the entrance of water into the subject conduits and junction box. Four conduits and one junction box were observed to have water intrusion.

2. Precautions were not taken to close the panel box, 2-C-344, during temporary configuration of the level transmitter. This caused the design intent to be violated.

3. Because this type cable is not specified for submergence or excessive wetting, some deterioration of the cable insulation could have occured.

4. Any future failure of the nonsafety-grade circuits would not have imposed a safety problem if left undetected.

5. Since water could drain out of the safety-grade conduits, the probability of any insulation deterioration is greatly reduced. In any case, the circuits are redundant and require a coincidence of two out of four logic conditions to permit the required safety action. Therefore, the system is designed to permit a single failure without affecting the safety action.

B. Recommendations

1. IN-85-465-WBN-01 - Identify and Verify Adequacy of Cables

Perform a detailed examination of the RWST conduits and identify any more that are taking in water. Test the respective cables to ensure they still meet specifications.

2. IN-85-465-WBN-02 - Seal All Conduit Entrances

Ensure all conduit entrances at the RWST are sealed according to the intent of the design drawings.

3. IN-85-465-WBN-03 - Eliminate Water Traps

Modify the observed conduits to prevent possible water traps.