TVA 64 (OS-9-65) (OP-WP-5-85)

NRC

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

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 04 1986

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : I-85-522-WBN

SUBJECT : FALSIFACTION OF QC INSPECTION RECORDS

CONCERN NO.: IN-85-682-005

(X) ACCEPT ( ) REJECT

Recommendations I-85-522-WBN-01 through -04 were written to improve the management-worker relationships within a particular unit of concern. The responses provided to these four NSRS recommendations were appropriate for describing actions to accomplish that objective.

K. W. Whitt

TOF:JTH
cc (Attachment):
R. P. Denise, LP6N40A-C
D. R. Nichols, E10A14C-K
QTC/ERT, CONST-WBN--For response to employee.
E. K. Sliger, LP6N48A

Principally prepared by T. O. Frizzell.

0405U

TVA 84 (08-9-88)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

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

FROM : W. T. Cottle, Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : JAN 13 1986

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO EMPLOYEE CONCERN INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is Construction response to recommendations I-85-522-WBN-01, I-85-522-WBN-02, I-85-522-WBN-03 and I-85-522-WBN-04 contained in Nuclear Safety Review Staff (NSRS) employee concern investigation report number I-85-522-WBN.

If you have any questions, please contact W. L. Byrd at 3774, Watts Bar Nuclear Plant P&E (Nuclear).

W. T. Cottle

WLB:RRG:NC
Attachment

This memorandum was principally prepared by R. R. Gibbs.

1/27/86--JTH
cc (Attachment):
Terry Frizzell, NSRS-WBN--For evaluation.

Employee Concern Number: IN-85-682-005

Recommendation: I-85-522-WBN-01 - Distribution of Unit Workload

RESPONSE: Without changing the method presently being used and in order to determine the relative workload distribution among Quality Control (QC) inspections, the QC supervisor will be instructed to develop a weekly report to be submitted to the Assistant Quality Manager (AQM) and handled adminsitratively confidential to evaluate the workload distribution. The weekly reports will include an inspection rating based on frequency times a difficulity factor to arrive at a numberal rating. This will be conducted for a two or three month period with monthly reviews by the supervisor and AQM jointly. The first weekly report will be due by February 10, 1986.

Based on results of these reviews, decisions will be made by the supervisor and AQM concerning distribution of work.

Recommendation: I-85-522-WBN-02 - Monitoring of QC Inspectors

RESPONSE: The reinspection process, as stated in the response to the Institute of Nuclear Power Operations (INPO) finding, should be used to provide individual performance assessment, verify adequacy, and interpretability of acceptance criteria. To evaluate the supervisor's performance in this area, it will be included as a specific Management Appraisal System (MAS) goal by February 3, 1986 and discussed quarterly with the supervisor and the AQM. As a part of the MAS goal, the supervisor will maintain a status of reinspection rejections for the purpose of trending to establish areas where retraining or clarification of procedures is required.

Recommendation: I-85-522-WBN-03 - Periodic Performance Appraisals

RESPONSE: Emphasis to be placed on evaluation of the reinspection process should aid in more frequent interaction between supervisor and inspectors. Additionally, the supervisor will be directed and made a part of his MAS goals for FY 86 to witness two inspections per week. These two items will increase input for individual performance assessments. The MAS goal will be established by February 3, 1986. The supervisor will begin to witness inspections starting February 10, 1986.

Recommendation: I-85-522-WBN-04 - Resolution of Interpersonal Conflicts

RESPONSE: A change in the AQM over this area will be effective January 6, 1986. Prior to requesting assistance from the Office of Employee Relations, the AQM will provide his own evaluation of the problem, and submit his findings and recommendations to the Quality Manager's Office (QMO) by April 7, 1986.

Principally prepared by C. O. Christopher, AQM, extention 3351.

TVA 64 (OS-9-65) (OP-WP-5-85)

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 04 1986

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : I-85-524-WBN

SUBJECT : ELECTRICAL CONSTRUCTION VIOLATIONS

CONCERN NO.: IN-85-913-001; -002; -004

(X) ACCEPT ( ) REJECT

1. Response accepted to NSRS Recommendation No. I-85-524-WBN-01.

   As recommended by the NSRS, WBN construction has agreed to revise WBNP-QCP-3.03 by February 14, 1986 to contain only cleanliness criteria in section 7.22 of the QCP and address the use of painted or galvanized junction boxes in Section 7.2.1.

2. Response accepted to NSRS Recommendation No. I-85-524-WBN-02.

   Provided with the response was records which demonstrate that as recommended by the NSRS the QC electrical engineering unit personnel were provided with a one-half block of instruction on the newly established "Employee Involvement Program" which is described in WBN-SOP-46. This program, which is adequately discussed in the response, provides the accepted method for handling employee concerns including assuring feedback to the concerned employee.

K. W. Whitt

TOF:GDM

cc (Attachment):
R. P. Denise, LP6N40A-C
D. R. Nichols, E10A14C-K
QTC/ERT, CONST-WBN--For response to employee.
E. K. Sliger, LP6N48A

Principally prepared by Terry O. Frizzell.

7383U

TVA 64 (08-9-85)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

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

FROM : W. T. Cottle, Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : JAN 17 1986

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO EMPLOYEE CONCERN INVESTIGATION REPORT I-85-524-WBN (EMPLOYEE CONCERNS IN-85-913-001, 002, 004)

Transmitted herein is Construction's response to recommendation numbers I-85-524-WBN-01 and I-85-524-WBN-02 contained in the Nuclear Safety Review Staff (NSRS) employee concern investigation report IN-85-524-WBN. Response to I-85-524-WBN-02 has been addressed by the response to employee concern IN-85-474-WBN-02 and is attached.

If you have any questions, please contact W. L. Byrd at 3774, Watts Bar Nuclear Plant P&E (Nuclear).

W. T. Cottle

WLB:RDA:NC
Attachment

This memorandum was principally prepared by R. D. Anderson.

1/26/86--JTH
cc (Attachment):
W. D. Stevens, NSRS-WBN--For evaluation.

JAN 22 '86

Note	Handle		Notec
		Whitt	
		[illegible]	
		LML	
		BJN	
		WCS	
		JTH	
		IRG	
		TARG	
		FILE	

Recommendation: I-85-524-WBN-01 - Quality Control Procedure Acceptance Criteria Revision

WBNP-QCP-3.03 should be revised such that "Painted or Galvanized" is addressed in Section 7.2.1 under "Material." and Section 7.2.2 reserved for only cleanliness criteria.

Response: We concur with the above recommendation. At the time of this writing, WBNP-QCP-3.03 is in revision review. The recommended changes will be included with the electrical engineering comments to this procedure revision draft.

This procedure will be revised by February 14, 1986.

Principally prepared by J. G. Parrish, extension 3295

Employee Concern IN-86-169-001

NSRS Recommendation to I-85-474-WBN-02 - Emphasize Hazardous Condition Reporting

Reemphasize to construction personnel that potentially hazardous conditions noted during the performance of work activities should be immediately reported to the supervisors or designated organizations for corrective action. For clarity, explain the established reporting methodology.

Response:

OC management has become increasing aware that, in the past, the voicing and resolution of employee concerns has not been totally effective. Either employees were relucant to come forth and express their concerns, or when the employee did express a concern no corrective action was visible because programmatic feedback to the employee was not required, therefore, this loop was not always completed.

As a result the "Employee Involvement Program" has been recently initiated for all site annual and craft employees. The mechanics of this program are spelled out in WBN-SOP-42 which requires that weekly sessions be held with all line supervisors and employees. Employees are encouraged to voice concerns regardless of topic. If the employee so desires, concerns may be expressed to the supervisor privately or written anonymously. Responses that cannot be handled by the line supervisor are documented and transmitted to the appropriate unit or orgnaization for disposition with the explanation or corrective actions, if appropriate, returned to the originating unit and the concerned employee.

If the employee remains unsatisfied or does not understand the response, the concern may be resubmitted for a higher level of review. In addition, all the other avenues to express safety-related concerns still remain open to the employee.

It is anticipated that the benefits of this program will be: increased interest and involvement by the "hands on" employee in the Watts Bar nuclear safety program; better participation by the employee that his or her concerns are considered, investigated, and positive corrective steps taken; and finally, improved confidence in TVA management's creditability and responsiveness by the employee, outside agencies and the public at large.

Principally prepared by J. G. Parrish, extension 3295

WBN-QCI-1.11-1 R3
Attachment A

: Training Office, Watts Bar Nuclear Plant OC

ROM : GARY LUBINSKI

ATE : 12-24-85

UBJECT: WATTS BAR NUCLEAR PLANT, QUALITY ASSURANCE TRAINING

I. The following persons have completed 1/2 hours of self study/(group instruction)/ practical application (circle one) in NSRS INVESTIGATION REPORTS I-85-524-WBN rev. N/A AND I-85-474-WBN.

Robert K. Smith
Instructor

II. Signature	Please Type Name as on payroll	Please Type Social Security No.	Please Type Badge No.	Unit	ASP only Sch. & Grade
Robert K. Smith	ROBERT K. SMITH	410-58-82-95		EEU-A	SC-4
Jerry L Crossno	JERRY L CROSSNO	407-58-9863		"	SC-3
George A. Maxwell	George A. Maxwell	324-52-1738	NA	EEU-A	SE-6
Bernard M Feldhaus	Bernard M. Feldhaus	291 42 4510	NA	EEU-A	SE-6
John O Robinson	John O Robinson	412 48 8922	N/A	EEU-A	SC 7
Walter D Harvey	Walter D Harvey	412-90-1666	N/A	EEU-A	SE-6
Mary V. Sears	Mary V. Sears	242-98-2407	N/A	EEU-A	SE-4
Jerry W. Perkins	Jerry W. Perkins	325-48-9790	N/A	EEU-A	SE-5
Timothy C Walker	Timothy C Walker	415 86 4750	N/A	"	SC-3
Jimmie E Wooldright	JIMMIE E. WOOLDRIGHT	411-94-6579	N/A	EEU-A	SC-3

Robert K. Smith
Supervisor

cc: Unit/Craft Files
P&T Unit

WBNP-QCI-1.11-1 R2
Attachment A
(front)

TO : Training Office, Watts Bar Nuclear Plant CONST

FROM : G. B. Lubinski, Supervisor, EEU-A, Watts Bar Nuclear Plant OC

DATE : 12-30-85

SUBJECT: WATTS BAR NUCLEAR PLANT, QUALITY ASSURANCE TRAINING

I. The following persons have completed 1/2 hours of self study/(group instruction)/ practical application (circle one) in NSRS INVESTIGATIONAL REPORTS NO.S I-85-529-WBN AND I-85-97...

[signature]
Instructor

II. Signature	Please Type Name as on payroll	Please Type Social Security No.	Please Type Badge Co. Unit	ASP only Sch. & Grade
[signature]	MARCO A. ALAS	578-80-1505	EEU-A	SC-2
[signature]	ROBERT L. BALDWIN	284-54-9668	EEU-A	SE-6
	MICHAEL J. DELISLE	380-60-5837	EEU-A	SE-6
[signature]	JEFFREY B. FAWCETT	234-88-8828	EEU-A	SC-3
[signature]	KENNETH S. FRAZIER	232-94-1250	EEU-A	SE-6
	D. HARNEY	412-80-1666	EEU-A	SE-6
[signature]	M. HEMPHILL	411-98-4075	EEU-A	SE-6
	RONALD C. HUFFER	410-88-5134	EEU-A	SE-6
	B. LONG	273-44-4225	EEU-A	SE-6
	THOMAS E. MILLER	414-66-4556	EEU-A	SE-5
	E. R. NELSON	366-62-3907	EEU-A	SC-3

cc: Unit/Craft files
P&T Unit

[signature]
Supervisor

TRAINING OFFICE USE ONLY							
	COURSE CODE	REV.	ASD.	EFFECTIVE DATE	MANHOURS	TRAVEL & PER DIEM	TUITION
11	13	22	24	26	40	46	51

WBNP-QUI-1.11-1 A2
Attachment A
(front)

TO: Training Officer, Watts Bar Nuclear Plant CONST

FROM: James G. Parrish, EEU-C

DATE: 12-24-85

SUBJECT: WATTS BAR NUCLEAR PLANT, QUALITY ASSURANCE TRAINING

I. The following persons have completed 1/2 hours of self study (group instruction) practical application (circle one) in How To Voice An Employee Concern rev. _____

David T. Reed
Instructor

II. Signatures	Please Type Name as on payroll	Please Type Social Security No.	Please Type Badge No. Unit	ASP only Sch. & Grade
	JOHN P. BAILEY	408-06-3910	EEU-C	SE-5
	JOHN R. BEHM	261-94-9095	EEU-C	SE-5
Paul F. Bellamy	PAUL F. BELLAMY	415-70-0316	EEU-C	SE-6
Jessie J. Blackburn	JESSIE J. BLACKBURN	415-02-4358	EEU-C	SE-5
	TROY L. BOWLIN	412-88-7774	EEU-C	SE-6
	EDGAR R. BROWN	410-04-8268	EEU-C	SE-5
	ROGER A. BROWN	416-96-5262	EEU-C	SE-5
John E. Carter Jr	JOHN E. CARTER, JR.	434-40-4541	EEU-C	SE-5
	M. ELAINE CLARK	417-72-8909	EEU-C	SE-5
	MARC K. COOK	413-04-1118	EEU-C	SE-5
Robert A. Domainigue	ROBERT A. DOMAINIGUE	020-26-2716	EEU-C	SC-4
Charles K. Coleman Jr		416-44-4573	EEU-C	SE-5
Philip A. Elia	PHILIP A. ELIA	153-44-2500	EEU-C	SC-4

David T. Reed
Supervisor

cc: Unit/Craft Files
P&T Unit

TRAINING CENTER USE ONLY							
	COURSE CODE	REV.	ADD.	EFFECTIVE DATE	HOURS/DAYS	TRAVEL & PER DIEM	TUITION
11	13	22	24	26	40	46	51

...-OCT-1 ... R2
Attachment A
(Back)

ature	Please type Name as on payroll	Please type SSN	Please type Badge No. Unit	ASP only Sch. & Grad
	EUGENE DOUGLAS	435-40-8812	EEU-C	SC-4
	CATHY E. FERRY	403-80-1420	EEU-C	SE-4
	JUDY G. FOSTER	410-62-3287	EEU-C	SB-2
	JEWEL H. FRANCIS	415-50-4654	EEU-C	SE-5
	NORMAN W. FRANCIS	105-46-7029	EEU-C	SC-3
	RALPH A. FRANKLIN	408-60-7214	EEU-C	SE-5
	VICKI L. GRAHAM	404-68-2950	EEU-C	SE-5
	ANN P. HARRIS	415-66-0196	EEU-C	SB-3
	LAWRENCE D. JACKSON	424-72-1044	EEU-C	SE-2
	RALPH E. JOHNSON	410-96-3764	EEU-C	SC-3
	JODY B. KILPATRICK	248-44-1183	EEU-C	SE-4
	HOWARD J. ROSE	227-38-3845	EEU-C	SE-6
	HELEN W. LAMLER	422-92-9361	EEU-C	SB-3
	PATRICIA A. MARTIN	234-70-5201	EEU-C	SE-5
	EARL K. MILLSAPS	408-56-2405	EEU-C	SE-6
	MARSHA L. MONDAY	377-66-9307	EEU-C	SB-3
	JERRY W. NAVE	414-94-8446	EEU-C	SE-6
	KENNETH P. NEWMAN	412-56-0999	EEU-C	SE-6
	JAMES G. PARRISH	408-66-0939	EEU-C	M-5
	JOHN W. PERKINS	305-48-9790	EEU-C	SE-5
	WALLACE G. PERKINS	419-74-2418	EEU-C	SE-5
	PHILLIP D. PERRY	423-60-7847	EEU-C	SE-6
	LINDA M. PHILLIPS	400-56-4921	EEU-C	SE-3
	DAVID T. REED	426-62-9556	EEU-C	SC-4
	SARAH D. STREET	408-88-5415	EEU-C	SE-5
	JAMES H. WALLACE	411-98-0950	EEU-C	SE-6
	PAMELA B. DANIELS	411-96-5766	EEU-C	SE-4

TVA 64 (OS-9-65) (OP-WP-5-85)

NRC

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

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 04 1986

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : I-85-474-WBN

SUBJECT : CONDUIT HEAT DAMAGE

CONCERN NO.: IN-86-169-001

( ) ACCEPT (X) REJECT

1. Response rejected to NSRS Recommendation No. I-85-474-WBN-01.

   The response adequately addressed actions to physically correct the identified damaged conduit (i.e.; a maintenance request will be issued to inspect and replace the damaged conduit by March 14, 1986). However, the recommendation that the root cause of the damage be determined and eliminated was not discussed or addressed in the formal response. The response should be revised to establish a commitment to and completion date for evaluating and eliminating the root cause of the damaged conduit to assure appropriate recurrence control.

2. Response rejected to NSRS Recommendation No. I-85-474-WBN-02.

   The response failed to address the recommendation that management reemphasize to WBN construction personnel the need to immediately report conditions which are potentially hazardous to the personnel or equipment. Instead, the response provided a description of the recently implemented "Employee Involvement Program" for reporting concerns. This program should not be substituted for the most direct supervisory contact in instances where immediate action may be needed.

K. W. Whitt

TOF:GDM

cc (Attachment):
R. P. Denise, LP6N40A-C
D. R. Nichols, E10A14C-K
QTC/ERT, CONST-WBN
E. K. Sliger, LP6N48A

Principally prepared by Terry O. Frizzell.

TVA 64 (05-9-88)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

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

FROM : W. T. Cottle, Site Director, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : JAN 16 1986

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO EMPLOYEE CONCERN INVESTIGATION REPORT I-85-474-WBN (EMPLOYEE CONCERN IN-86-169-001)

Transmitted herein is Construction's response to recommendations I-85-474-WBN-01 and 02 contained in the Nuclear Safety Review Staff (NSRS) employee concern investigation report I-85-474-WBN.

If you have any questions, please contact W. L. Byrd at 3774, Watts Bar Nuclear Plant P&E (Nuclear).

W. T. Cottle

WLB:RDA:NC
Attachment

This memorandum was principally prepared by R. D. Anderson.

1/27/86 --JTH
cc (Attachment):
W. D. Stevens, NSRS-WBN--For evaluation.

Recommendation: I-85-474-WBN-01 - Evaluation and Replacement of Conduit Cable

Replace the flexible conduits previously described, and evaluate and replace as necessary the associated cable. Determine and eliminate the root cause of the damage.

Response: These components are transferred to Watts Bar P&E (Nuclear). Therefore, they are not under the direct control of OC. According to Mr. Dan Thompson, NSB, the maintenance request A-477393 will require inspection and replacement as necessary.

The estimated completion date is March 14, 1986.

NOTE: Heat tracing circuits are not under the quality assurance program.

Principally prpeared by J. G. Parrish, extension 3295

Employee Concern IN-86-169-001

NSRS Recommendation to I-85-474-WBN-02 - Emphasize Hazardous Condition Reporting

Reemphasize to construction personnel that potentially hazardous conditions noted during the performance of work activities should be immediately reported to the supervisors or designated organizations for corrective action. For clarity, explain the established reporting methodology.

Response:

OC management has become increasing aware that, in the past, the voicing and resolution of employee concerns has not been totally effective. Either employees were relucant to come forth and express their concerns, or when the employee did express a concern no corrective action was visible because programmatic feedback to the employee was not required, therefore, this loop was not always completed.

As a result the "Employee Involvement Program" has been recently initiated for all site annual and craft employees. The mechanics of this program are spelled out in WBN-SOP-42 which requires that weekly sessions be held with all line supervisors and employees. Employees are encouraged to voice concerns regardless of topic. If the employee so desires, concerns may be expressed to the supervisor privately or written anonymously. Responses that cannot be handled by the line supervisor are documented and transmitted to the appropriate unit or orgnaization for disposition with the explanation or corrective actions, if appropriate, returned to the originating unit and the concerned employee.

If the employee remains unsatisfied or does not understand the response, the concern may be resubmitted for a higher level of review. In addition, all the other avenues to express safety-related concerns still remain open to the employee.

It is anticipated that the benefits of this program will be: increased interest and involvement by the "hands on" employee in the Watts Bar nuclear safety program; better participation by the employee that his or her concerns are considered, investigated, and positive corrective steps taken; and finally, improved confidence in TVA management's creditability and responsiveness by the employee, outside agencies and the public at large.

Principally prepared by J. G. Parrish, extension 3295

: Training Office, Watts Bar Nuclear Plant OC

ROM : GARY LUBINSKI

ATE : 12-24-85

UBJECT: WATTS BAR NUCLEAR PLANT, QUALITY ASSURANCE TRAINING

I. The following persons have completed 1/2 hours of self study/(group instruction)/ practical application (circle one) in NSRS INVESTIGATION REPORTS I-85-524-WBN rev. N/A AND I-85-474-WBN.

Robert K. Smith
Instructor

II. Signature	Please Type Name as on payroll	Please Type Social Security No.	Please Type Badge No.	Unit	ASP only Sch. & Grade
Robert K. Smith	ROBERT K. SMITH	410-58-8295		EEU-A	SC-4
Jerry L Crosson	JERRY L CROSSON	408-58-9863		"	SC-3
George A. Maxwell	George A. Maxwell	324-52-1738	NA	EEU-A	SE-6
Bernard M Feldhaus	Bernard M. Feldhaus	291 42 4510	NA	EEU-A	SE-6
John O Robinson	John O Robinson	412 48 8922	N/A	EEU-A	SC 7
Walter D Harney	Walter D Harney	412-80-1666	N/A	EEU-A	SE-6
Mary V. Sears	Mary V. Sears	242-98-2407	N/A	EEU-A	SE-4
James W. Perkins	James W. Perkins	305-48-9790	N/A	EEU-A	SE-5
Timothy C Walker	Timothy C Walker	415-86-4750	N/A	"	SC-3
Jimmie E. Wooldright	JIMMIE E. WOOLDRIGHT	411-94-6579	N/A	EEU-A	SC-3

Robert K. Smith
Supervisor

C: Unit/Craft Files
P&T Unit

[redacted]
Attachment A
(Back)

Signature	Please type Name as on payroll	Please type SSN	Please type Badge No. Unit	ASF only Sch. & Grade
Ralph E Phillips	RALPH E. PHILLIPS	418-62-8376	EEU-A	SE-6
Emma H. Sanders	D. SANDERS	421-88-0692	EEU-A	SE-5
Kenneth O Smith	KENNETH O. SMITH	416-54-3593	EEU-A	SC-4
Sam Sutphin	SAMUEL W. SUTPHIN	410-25-0805	EEU-A	SC-2
Alan D Wade	ALAN D. WADE	409-98-4939	EEU-A	SC-2
Paul A Thornton	THORNTON, PAUL A..	102-38-1146	EEU-A	SE-6

Attachment A
(front)

THRU: [illegible] Watts Bar Nuclear Plant CONST

FROM: James G. Parrish, EEU-C

DATE: 12-24-85

SUBJECT: WATTS BAR NUCLEAR PLANT, QUALITY ASSURANCE TRAINING

I. The following persons have completed 1/2 hours of self study (group instruction) practical application (circle one) in How To Voice An Employee Concern rev. _____

David T. Reed
Instructor

II. Signatures	Please Type Name as on payroll	Please Type Social Security No.	Please Type Dept. No. Unit	ASP only Sch. & Grad
	JOHN F. BAILEY	408-06-3910	EEU-C	SE-5
	JOHN R. BEHM	261-94-9095	EEU-C	SE-5
Paul F. Bellamy	PAUL F. BELLAMY	415-70-0316	EEU-C	SE-6
Jessie J. Blackburn	JESSIE J. BLACKBURN	415-02-4358	EEU-C	SE-5
	TROY L. BOWLIN	412-88-7774	EEU-C	SE-6
	EDGAR R. BROWN	410-04-8268	EEU-C	SE-5
	ROGER A. BROWN	416-96-5262	EEU-C	SE-5
John E. Carter Jr	JOHN E. CARTER, JR.	434-40-4541	EEU-C	SE-5
	M. ELAINE CLARK	417-72-8909	EEU-C	SE-5
	MARC K. COOK	413-04-1118	EEU-C	SE-5
Robert A. Domainigue	ROBERT A. DOMAINIGUE	020-26-2716	EEU-C	SC-4
Charles L. Colvin Jr		416-44-4573	EEU-C	SE-5
Philip A. Elia	PHILIP A. ELIA	153-44-2500	EEU-C	SC-4

David T. Reed
Supervisor

cc: Unit/Craft Files
P&T Unit

TRAINING CENTER USE ONLY							
	COURSE CODE	REV.	SEC.	EFFECTIVE DATE	HOURS/DAYS	TRAVEL & PER DIEM	TUITION
11	13	22	24	26	40	46	51

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ature	Please type Name as on payr. 11	Please type SSN	Please type Budge No. Unit	ASP only Sch. & G
Do Lan	EUGENE DOUGLAS	405-40-6[illegible]	EEU-C	SC-4
Cathy Ferry	CATHY L. FERRY	403-80-1420	EEU-C	SE-4
	JUDY G. FOSTER	410-62-3287	EEU-C	SB-2
	JEWEL H. FRANCIS	415-50-4654	EEU-C	SE-5
	NORMAN W. FRANCIS	105-46-7029	EEU-C	SC-3
	RALPH A. FRANKLIN	408-60-7214	EEU-C	SE-5
Vicki L. Graham	VICKI L. GRAHAM	404-68-2950	EEU-C	SE-5
Ann P. Harris	ANN P. HARRIS	415-66-0196	EEU-C	SB-3
	LAWRENCE D. JACKSON	424-72-1044	EEU-C	SE-2
Ralph E. Johnson	RALPH E. JOHNSON	410-96-3764	EEU-C	SC-3
Jody B. Kilpatrick	JODY B. KILPATRICK	246-44-1183	EEU-C	SE-4
	HOWARD J. [illegible]ROSE	221-38-3845	EEU-C	SE-6
	HELEN W. LAWLER	422-92-9361	EEU-C	SB-3
	ATRICIA A. MARTIN	234-70-5201	EEU-C	SE-5
	ARL K. MEISAPS	403-36-2405	EEU-C	SE-6
	MARSHA L. MONDAY	377-66-9307	EEU-C	SB-3
Jerry W. Nave	JERRY W. NAVE	414-94-8446	EEU-C	SE-6
Ken Newman	KENNETH P. NEWMAN	412-56-0999	EEU-C	SE-6
	JAMES G. PARRISH	408-66-0939	EEU-C	M-5
	JOHN W. PERKINS	305-48-9790	EEU-C	SE-5
	WALLACE G. PERKINS	419-74-2418	EEU-C	SE-5
	PHILLIP D. PERRY	423-60-7847	EEU-C	SE-6
Linda T. Phillips	LINDA M. PHILLIPS	400-56-4921	EEU-C	SE-3
David T. Reed	DAVID T. REED	426-62-9556	EEU-C	SC-4
	SARAH D. STREET	408-88-5415	EEU-C	SE-5
	JAMES H. WALLACE	411-98-0950	EEU-C	SE-6
Pamela B. Daniels	PAMELA B. DANIELS	411-96-5766	GEU-C	Sec.
[illegible]	[illegible]	414-46-2674	EEU-C	SE-4

TVA 64 (OS-9-65) (OP-WP-5-85)

NRC

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

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 04 1986

SUBJECT: CORRECTIVE ACTION RESPONSE EVALUATION

REPORT NO. : IN-85-069-001

SUBJECT : INVALIDATED APPENDIX R INSPECTIONS

CONCERN NO.: IN-85-069-001

( ) ACCEPT (X) REJECT

1. Q-85-069-001-01: "Invalidated Appendix R Support Inspection"

   NSRS rejects the response to this item since a justification for the acceptability of a two and one-half percent rejection rate has not been made. NSRS notes that there exists torquing requirements for the bolts in question and the reinspection effort did not establish that these bolts were found correctly torqued, only that they were "bolted up and snug".

2. Q-85-069-001-02: "Rework After Final Inspection"

   The memorandum referenced in this response applies to QC's support of investigations conducted by the Employee Response Team. The scope of this memorandum appears to be too narrow to take credit for increasing the emphasis and visibility on rework controls. Therefore NSRS rejects this response and requests that additional corrective action be taken.

K. W. Whitt

BFS:JTH
cc (Attachment):
R. P. Denise, LP6N40A-C
D. R. Nichols, E10A14C-K
QTC/ERT, CONST-WBN
E. K. Sliger, LP6N48A

Principally prepared by Bruce F. Siefken.

TD406U

TVA 24 (08-0-48)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

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

FROM : E. R. Ennis, Plant Manager, Watts Bar Nuclear Plant P&E (Nuclear)

DATE : DEC 09 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - RESPONSE TO EMPLOYEE CONCERN INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is Construction's second response to recommendations Q-85-069-001-01, Q-85-069-001-02 contained in Nuclear Safety Review Staff (NSRS) employee concern investigation I-85-069-001.

If you have any questions, please contact W. L. Byrd at 3774, Watts Bar Nuclear Plant P&E (Nuclear).

W L Byrd for
E. R. Ennis

WLB:RRG:NC
Attachment

This memorandum was principally prepared by R. R. Gibbs.

DEC 10 '85

✓ MAN

✓ JIN

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

RESPONSE TO RECOMMENDATIONS Q-85-069-001-01 AND Q-85-069-001-02

Q-85-069-001-01

The investigation that was conducted revealed that no hardware deficiencies were found. Missing and damaged torque striping was discovered on 19 bolts of approximately 800 which were checked. This deficiency does not prevent these features from performing their intended design functions. Construction (OC) does not feel that this condition warrants further investigation. Missing and damaged torque striping on bolts may appear as an OC deficiency upon observation, however, the operating plant (NUC PR Modification and Maintenance Groups) is subject to perform modifications or rework to transferred plant features on a continuing basis. The NUC PR inspection requirements do not require torque stripe on bolted connections from discussion with Howard Pope, NUC PR QE supervisor.

Q-85-069-001-02

Control of work on permanent plant features has been reemphasized by issuance of memorandum from Guenter Wadewitz dated August 21, 1985, (see attached). The 19 cases of missing or damaged torque stripe discovered during OC's investigation were documented by NCR 6194 and subsequently redocumented according to QCP-4.23-8. This NCR was completed and closed on August 8, 1985.

TVA 64 (08-8-68)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : Those listed

FROM : Guenter Wadewitz, Project Manager, Watts Bar Nuclear Plant, OC

DATE : AUG 21 1985

SUBJECT: WATTS BAR NUCLEAR PLANT - EMPLOYEE RESPONSE TEAM (ERT) INVESTIGATIONS - OC ASSISTANCE OF ERT INVESTIGATORS

During the week of August 12, 1985, Office of Construction personnel were asked by an Employee Response Team investigator to provide assistance in the investigation. The assistance requested included physical disassembly of transferred permanent plant hardware so that inspections could be performed. As a result of this action, not only was hardware damaged but it was removed without the necessary approval by NUC PR and resulted in an NCR being generated.

As evidenced by the incident described above, I feel it necessary to again provide instructions to OC personnel involved in assisting the Employee Response Team in any way. The following guidelines are consistent with those directives issued by Ralph Pierce, Project Manager, and will be strictly complied with:

1. Provide courteous and responsive service to ERT requests.

2. Assist the ERT by providing documentation, information, references, history, escort services, etc. which will allow expeditious completion of any investigation.

3. Refer <u>any</u> request for physical changes to permanent plant hardware to L. D. Clift, Manager, Nuclear Services Branch.

4. Refer any recommendation by the ERT investigator for generation of an NCR to L. D. Clift, Manager, Nuclear Services Branch.

5. Obtain the employee concern I.D. number from the ERT investigator and charge all work time spent during assistance to account number N030-399-39-J0-28-22.

Those listed

AUG 21 1985

WATTS BAR NUCLEAR PLANT - EMPLOYEE RESPONSE TEAM (ERT) INVESTIGATIONS - OC ASSISTANCE OF ERT INVESTIGATORS

The Office of Construction fully supports the Employee Response Program and will assist in the expeditious completion of any investigation. However, changes to permanent physical plant hardware must be controlled to ensure both personnel and plant safety and must be adequately evaluated by management prior to being performed.

Guenter Wadewitz

L. D. Clift, NSB-WBN OC
H. J. Fischer, CEO-WBN OC
C. H. Jetton, CSO-WBN OC
S. Johnson, QMO-WBN OC

RCM/LDR
cc: RIMS, MR4N72 A-C
J. Coan, P-104 SB-K
E. Ennis, NUC PR WBN
R. M. Pierce, 9-169 SB-K
K. W. Whitt, E7B31 C-K

TVA 64 (OS-9-65) (OP-WP-5-85)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

TO: S. Schum, QTC/ERT Program Manager, Watts Bar Nuclear Plant

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

DATE: FEB 04 1986

SUBJECT: TRANSMITTAL OF ACCEPTED FINAL REPORTS

The following final reports have been reviewed and accepted by NSRS and are transmitted to you for preparation of employee responses.

IN-85-372-004
IN-85-627-002
IN-85-729-001
IN-86-217-001 (I-85-453-WBN)
IN-86-238-001
IN-86-263-001 (I-85-554-WBN)

Original Signed By
M. A. Harrison

K. W. Whitt

Please acknowledge receipt by signing below, copying and returning this form to J. T. Huffstetler, E3B37 C-K.

NAME DATE

Attachments
cc (Attachments):
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
Eric Sliger, LP6N48A-C

0408U

QUALITY TECHNOLOGY COMPANY
P.O. BOX 600 Sweetwater, TN 37874 (615)365-4414

ERT INVESTIGATION EXTERNAL REPORT

CONCERN NO: IN-85-627-002, IN-85-372-004, IN-86-238-001, IN-85-729-001

CONCERN: SEE DETAILS BELOW. A generic investigation was performed in the following areas with regard to the effect of sub-journeymen performing journeymen work.

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

INVESTIGATION PERFORMED BY: Ray Chappell

DETAILS

The below listed concerns are of generic nature, and the subject matter contained in each of the concerns has been previously investigated and substantiated (Reference file number IN-85-556-001).

#IN-85-627-002
Concern: Sub-journeymen performing crafts work.

#IN-85-372-004
Concern: General foremen are under great schedule pressure, and often use sub-journeymen to do journeymen work, but they do poor quality work. There are not any written rules or criteria for what sub-journeymen should be used to do. This is a case of schedule taking precedence over quality.

#IN-86-238-001
Concern: A sub-journeyman was incorrectly performing journeyman's work on QA cables per management direction.

#IN-85-729-001
Concern: Sub-journeymen are allowed to perform work which normally requires the experience of a journeyman. This applies to all craft disciplines within the power division.

Accepted by

PREPARED BY: R Chappell 1/28/86 DATE

REVIEWED BY: O R Shea 1/28/86 DATE

FINAL

REQUEST FOR REPORTABILITY EVALUATION
IN-85-729-001, IN-86-238-001

1. Request No. IN-85-627-002, IN-85-372-004,
(ERT Concern No.) (ID No., if reported)

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

3. Description of Problem (Attach related documents, photos, sketches, etc.)
Sub-journeymen are allowed to perform work which normally requires the experience of a journeyman.

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 pertform 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: [signature] 365-4414

ERT Group Manager Phone Ext.

[signature] 365-4414

ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

[signature]

Signed

Date 2/2/86 Time 1650

ERT Form M

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-453-WBN

EMPLOYEE CONCERN IN-86-217-001

MILESTONE 6

SUBJECT: NO CERTIFIED CONCRETE FINISHERS WITHIN A GROUP

DATES OF INVESTIGATION: January 6-29, 1986

INVESTIGATOR: _____ 1/31/86
J. L. Croes Date

REVIEWED BY: _____ 1/31/86
for J. D. Smith Date

APPROVED BY: _____ 1/31/86
for M. A. Harrison Date

I. BACKGROUND

The Nuclear Safetv Review Staff (NSRS) investigated Employee Concern IN-86-217-001 which was received by the Qualitv Technologv Companv (QTC) Employee Response Team that stated:

> There are no certified concrete finishers within a TVA group (known). CI stated that concrete finishers must be certified (bv testing) to perform "drv packing," but his work is being performed bv other craft (known). Nuc Pwr dept. concern. CI has no additional information.

II. SCOPE

The concern was investigated through interviews and document reviews to determine if there were certification requirements for concrete finishers in Nuclear Power and if drypacking was required to be done by a certified concrete finisher.

III. SUMMARY OF FINDINGS

A. Applicable Documents

1. MAI-17, Revision 2 (9/13/85), "Grouting and Drypacking of Baseplates and Joints"

2. MAI-19, Revision 0 (8/20/85), "Repair of Concrete"

3. General Construction Specification G-2, Revision 5 (11/1/85), "Plain and Reinforced Concrete"

4. General Construction Specification G-21, Revision 1 (6/28/84), "Masonry"

5. General Construction Specification G-32, Revision 10 (4/1/85), "Bolt Anchors Set in Hardened Concrete"

6. General Construction Specification G-34, Revision 3 (8/2/85), "Repair of Concrete"

B. Findings

The employee concern stated that there were no certified concrete finishers within a TVA group. Further investigation revealed that the group in question was the Modifications Mechanical Section.

An interview with the Modifications Mechanical Supervisor revealed that there were no cement masons in the Modifications work crews prior to December 16, 1985; however, a cement mason was added to the crew on December 16, 1985 to help handle the increase in concrete work.

Interviews with the QC concrete inspectors revealed that no concrete work performed bv the laborers had been rejected; however, the finished qualitv of the concrete work had (in their opinion) improved since the addition of a cement mason to the work crew.

The Modifications and Additions Instructions for Concrete Placement. Repair of Concrete, and Grouting and Drypacking of Baseplates and Joints have no requirements for a cement mason to perform any of the work. Several procedures for plant masonry work were reviewed with no requirements found for worker qualifications or certifications. There were requirements for material sample testing. There were also QC holdpoints stated which were to assure the proper application of the concrete regardless of who performed the work.

Drypacking is mostly done for cosmetic repairs and does not require QC inspection unless specifically required in a workplan for Category 1 structures.

The Tennessee Valley Trades and Labor Council and TVA have agreed to contract language which allows any craft to perform masonry work in the modifications area of Nuclear Power. Article VI of the agreement states: "After staffing an installation or job, TVA shall assign the work to those employees who in its judgement are qualified to safely and efficiently perform the work."

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The employee concern was substantiated. On December 16, 1985 a cement mason was added to the Modifications work crew.

Using laborers to do concrete finishing work is not a violation of the union contract. No instances of rejected concrete work by laborers was noted during this investigation.

Recommendations

None.

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-554-WBN

EMPLOYEE CONCERN IN-86-263-001

MILESTONE 6

SUBJECT: QUALITY RECORDS

DATES OF INVESTIGATION: January 22-28, 1986

LEAD INVESTIGATOR: A. M. Gentry _____ Date: 1-30-86

INVESTIGATOR: J. J. Knightly _____ Date: 1-30-86

REVIEWED BY: By J. D. Smith _____ Date: 1/30/86

APPROVED BY: for M. A. Harrison _____ Date: 1-30-86

I. BACKGROUND

NSRS has investigated Employee Concern IN-86-263-001 which was identified by the Quality Technology Company (QTC) during the Watts Bar Employee Concern Program that stated:

> The Quality documentation at Watts Bar does not meet the Codes/Standards Procedures and must be taken more seriously and reviewed before it goes into permanent storage. Construction Dept. concern.

II. SCOPE

The investigation was conducted by reviewing previous NSRS investigations and reports related to quality records. These reports are referenced below.

III. SUMMARY OF FINDINGS

A. Two previous reports related to quality records were reviewed and provide the basis for this report.

B. NSRS Investigation Report I-85-550-WBN stated that there were instances of illegible, incomplete, or misplaced records documented in the past and that corrective actions have been accomplished on several deviations. It was also noted that Construction established a records review group in September 1983 to review incoming records. Records reviews since September 1983 appear to have been generally thorough.

C. NSRS Investigation Report I-85-548-WBN dealt with the training and supervision of the Construction records review personnel. The report stated that review of plant records appears to be accomplished by individuals who are adequately trained and supervised. These reviews have been performed since September 1983 as stated above.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The employee concern was substantiated since previous NSRS investigations indicated instances of inadequate records. The concern was mitigated by the fact that these inadequacies were identified and action has been taken to correct the inadequacies.

Recommendations

None.

TVA 64 (OS-9-65) (OP-WP-5-85)

UNITED STATES GOVERNMENT

Memorandum TENNESSEE VALLEY AUTHORITY

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 04 1986

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is Report No. IN-85-442-X13

Subject SEISMIC TRENCHES

Concern Nos. IN-85-442-X13, IN-85-066-001, IN-85-472-007, IN-85-496-001, and WI-85-040-004

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by February 26, 1986. Should you have any questions, please contact B. F. Siefken at telephone 6230.

Recommend Reportability Determination: Yes X No ____

Director, NSRS/Designee

BFS:GDM
Attachment
cc (Attachment):
H. L. Abercrombie, SQN
W. C. Bibb, BFN
James P. Darling, BLN
R. P. Denise, LP6N40A-C
W. E. Mason, E11C49C-K--Please review for legal implications.
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 Report No. IN-85-442-X13
Subject SEISMIC TRENCHES for action/disposition.

_____ _____
Signature Date

NSRS RECOMMENDATIONS

EMPLOYEE CONCERN NUMBER: IN-85-442-X13

Q-85-442-X13-01: "Seismic Trench"

The report contains a number of findings concerning the adequacy of the ERCW seismic trenches, the accuracy of the FSAR, and the adequacy of the construction and design control processes in report Sections VI, VII, and VIII. These findings, conclusions and observations should be individually addressed. Additionally, the root-causes for these breakdowns should be identified and corrected.

Principally prepared by Bruce F. Siefken.

QUALITY TECHNOLOGY COMPANY
P.O. BOX 600 Sweetwater, TN 37874 (615)365-4414

ERT INVESTIGATION REPORT PAGE 1 OF 53

CONCERN NO: IN-85-442-NI3 (Milestone 1)

RELATED CONCERN NOS: (See RELATED CONCERNS, below)

CONCERN: West Side ("B" Side) underground dam by intake was not done per specification because of schedule, pressure, winter season and rainy weather. Instead of using compactible clay, TVA used 1075 (T-1 Rock) which is 0.75"-1.5" material used mainly in trench drains as filler material. It is easy to install in bad weather and it makes up 20% of the south end, and is not compacted. Also, the "B" trench (Dam) doesn't contact the intake structure but Knoxville said "if the NRC doesn't say anything then we'll just keep quiet" and QC was told not to write an NCR. Around the trench ends and bed between trench and intake water seems to well up when the pond is at its normal level. This is a problem because the reason for building the underground dams was to keep sand under and around intake from "liquefying" during an earthquake.

INVESTIGATION PERFORMED BY: J. T. Eaton

DETAILS

TABLE OF CONTENTS:

ATTACHMENTS: A, B, C, & D (See RELATED CONCERNS, below)

I. RELATED CONCERNS:

Refer to the indicated Attachment of this Report for an ERT Investigation Report for each of the following Related Concerns:

Related Concern No.	Attachment
IN-85-066-001	A
IN-85-472-007	B
IN-85-496-001	C
NI-85-040-004	D

The Related Concerns are addressed in this Report, as indicated in the applicable Attachment.

DETAILS. continued

II. PERSONNEL CONTACTED: CONFIDENTIAL

III. REFERENCES:

A. WBNP Final Safety Analysis Report (FSAR), Amendment 54, dated 1/9/85 as follows:

1. Section 2.5.4, "Stability of Subsurface Materials".

2. Section 2.5.5, "Stability of Slopes".

3. Figures 2.5-225, -226, and -226a, "Excavation and Backfill, Category I Structures", also identified as Drawings 10W335, 336 and 337.

4. Figures 2.5-580 and -581, "Underground Barriers for Potential Soil Liquefaction", also identified as Drawing 10N213-1 and 2.

5. Figure 2.5-582, "Yard, Category I, ERCW Piping and Conduits, Plan."

6. Figure 2.5-583, "remedical Treatment for Potential Soft Liquefaction, Stability Analysis Summary, Load Diagram."

7. Chapter 17.0, "Quality Assurance", TVA Topical Report TVA-TR75-1A, "Quality Assurance Program Description for the Design, Construction, and Operation of TVA Nuclear Power Plants", Revision 8.

DETAILS. continued

III. REFERENCES. continued

B. Specifications:

1. General Construction Specification G-9, "Rolled Earthfill for Dams and Power Plants". Revision 5 dated 11/16/79.

2. General Construction Specification T-1, "Site Development. Highway, Railroad, and Bridge Construction", Revision 1 dated 10/19/85, including "Material Specifications":

a. Section 1032, "Crushed Stone".

b. Section 1075, "Crushed Stone for Switchyard Surfacing".

C. Design Drawings/Changes:

1. Drawing 10N210, "General Grading Plan, Main Plant", Revision 28.

2. Drawing 10N213-1, "Underground Barriers for Potential Soil Liquefaction", Revision 1.

3. Drawing 10N213-2, "Underground Barriers for Potential Soil Liquefaction", Revision 6.

4. Drawing 10N215, "Grading Plan, Intake Channel", Revision 10.

5. Drawing 10N225, "Yard Drainage Holding Pond", Revision 10.

6. Drawing 10N234, "Drainage Details, Plant Area, Sheet 4", Revision 14.

7. Drawing 10W245, "Finished Grading & Paving, Sheet 6", Revision 10.

8. Drawing 10W245-1, "Finished Grading & Paving, Sheet 8", Revision 1.

9. Drawing 31N224-1, "Concrete, Retaining Wall at Intake Pumping Sta.-Outline & Reinf.", Revision 10.

DETAILS. continued

III. REFERENCES, continued

C. Design Drawings/Changes, continued

10. Drawing 41N200-1, "Concrete.General Outline Features", Revision 4.

11. Engineering Change Notice (ECN No. 3960, "Construct underground barriers of compacted earth fill...", dated 6/9/83.

12. Engineering Change Notice (ECN) NO. 4557, "Revise notes to reflect new placement instructions for earthfill and to revise the requirements for testing soil being used for fill," dated 1/24/84.

13. Field Change Request (FCR) NO. F-3247, "Add note 6C..." (Dwg 10N213-2), cated 4/30/84.

D. Quality Control Procedures/Instructions:

1. WBNP-QCP-2.01, "Earthfill and Backfill Placement, Inspection, and Documentation", Revision 6 dated 6/20/84.

2. WBNP-QCP-2.06, "Granular Fill Placement, Inspection, and Documentation", Revision 4 dated 7/9/82.

3. WBNP-QCI-1.02, "Control of Nonconforming Items", Revision 15 dated 11/1/85.

E. Records/Documentation:

1. Nonconforming Condition report (NCR) No. 5257, "Failure to fully implement procedural requirements of construction specification G-9, section 11.2...", dated 12/1/83.

2. Backfill Daily reports (WBNP-QCP-2.01 and WBNP-QCP-2.06) for 1976, 1983 and 1984.

3. Fill Tracking System (WBNP-QCP-2.01 and WBNP-QCP-2.06).

4. Granular Compaction Test - Sand Cone Method (WBNP-QCP-2.06) reports for 1983 and 1984.

DETAILS, continued

III. REFERENCES, continued

F. Memoranda/Letter:

1. Reply Memo, Civil Design Project Engineer (P. H. Threlkeld) to WBNP Project Manager (J. C. Killian), dated 2/14/74, "WBNP - Backfill".

2. Memorandum, WBNP Project Manager (J.C. Killian) to WB Design Project Manager (R. M. Pierce), dated 6/18/74, "WBNP-Crushed Stone Backfill - Class I Structures".

3. Memorandum, SQNP & WBNP Design Projects Manager (R. M. Pierce) to WBNP Project Manager (J. C. Killian), dated 6/22/76, "WBNP - Yard Conduits and Piping - Backfilling During Construction"; and attached Report No. CEB-76-15, dated 6/22/76, "Instructions for Backfilling after Construction of Yard Conduits and Piping".

4. Memorandum, Manager of Construction (H.H. Mull) to CONST (all projects), dated 1-30-80, "Earthfill Operations and Quality Control". (DOC 800130004)

5. Memorandum, OE/CEB (H.R.Threlkeld) to CEB Files, dated 8/1/83,"WBNP-Liquefaction Potential-Underground Barrier Remedial Treatment--Status and Observations based on Field Inspection". (CEB830801020)

6. Letter, TVA (J. A. Domer) to US NRC (E. Adensam), dated 1/16/85, "...information concerning the as-built configuration of the underground barrier at WBNP". (L44 850116809)

G. USNRC Inspection Reports:

1. Report No. 50-390/83-41 (A02 831021 019)

2. Report No. 50-390/84-16 (A02 840316 001)

3. Report No. 50-390/84-64 (A02 840917 029)

DETAILS, continued

IV. SUMMARY OF INVESTIGATION:

The concern is substantiated.

The investigation was conducted, intermittently, during the period of November 1 to 27, 1985, and included personnel contacts/interviews, document/documentation reviews and field observation. The investigation encompassed three aspects of the Concern, which involves Category 1 (safety-related) soils and related structures such as the Intake Pumping Station (IPS) and Sheet Pile wall, Trench B (Underground Barrier) and Essential Raw Cooling Water (ERCW) underground lines.

The Concern has three aspects, which are identified in the Clarification of Concern, Section V of this Report.

For the Concern aspect regarding the use of 1075 granular material for backfill of Trench B (Underground Barrier), it was found that the material was used lieu of Class A, compactible earthfill to facilitate construction during the winter season. It was found that the material is not described in the FSAR or Specifications as a material suitable for compacted backfill or as an acceptable substitute for Class A or A1 backfill. The material was installed in Trench B to depths of 17-ft., which is not specifically reflected in the FSAR description of the work for the Underground Barriers for Potential Soil Liquefaction, and is not appropriately prescribed in the applicable Design Drawings. The Design Drawings permit verbal (oral) instruction, which was not found to be documented, for use of this material. Additionally, it was found that the material was not subjected to in-place testing, contrary to the FSAR and Quality Control Procedure provisions for construction control of backfill.

For the Concern aspect regarding the questionable "gap" in backfill between Trench B and the Intake Pumping Station (IPS), it was found that such a "gap" does exist and was not documented. The "gap" was described by personnel, who witnessed the excavation at that location, as being questionable (potentially liquefiable) "sands" that were not removed in an unsuccessful attempt to tie-in the Trench B and IPS backfill. The Design Drawing Note, which indicates the need to "assure adequate cutoff of potentially

DETAILS. continued

IV. SUMMARY OF INVESTIGATION. continued

liquefiable sands", does not mandate the objective and permits undocumented, verbal (oral) instruction for the work. No NCR or other report of the condition was found to have been issued, and personnel stated that there has been no identification of the condition to or by the US NRC. Additionally, it was found that 1975 material was used for backfill of this area, in conjunction with the questionable use of such material for Trench B, as indicated in the Concern aspect above.

For the Concern aspect regarding the seepage/percolation of underground water at the surface of the slope between Trench B and the IPS, it was found that a "hole", and an erosion "rut" leading from the "hole", does presently exist. Field observation of these conditions revealed that such seepage/percolation had previously occurred. Documentation of this condition was not found, however, personnel stated that unsuccessful attempts had been made to locate the source of the underground water. Documented evidence of identification and corrective action to resolve the condition, and technical evaluation to determine the affects of this condition, were not found during this investigation.

Conclusions for each of the aspects of the Concern, and a conclusion that the Findings reflect nonconforming or deficient conditions that render the quality of involved structures unacceptable or indeterminate, are addressed in Section VII of this Report.

Observations of conditions not specifically identified in the Concern, but revealed during this Investigation and found to be contrary to QA program requirements or good practice, are contained in Section VIII of this Report.

V. CLARIFICATION OF CONCERN:

A. The Concern has three aspects which are identified and clarified as follows for this Report:

DETAILS. continued

V. CLARIFICATION OF CONCERN. continued

A. continued

1. First Aspect of the Concern:

"West side ("B" side) underground dam by Intake was not done per specification because of schedule, pressure, winter season and rainy weather. Instead of using compactible clay, TVA used 1075 (T-1 Spec) which is 0.75"-1.5" material used mainly in trench drains as filler material. It is easy to install in bad weather and it makes up 20' of the south end, and is not compacted."

This aspect of the Concern involves the Underground Barrier (Trench B) located northwesterly of the Intake Pumping Station (IPS).

The Concern states or indicates that the "1075" (crushed stone per General Construction Specification T-1, Section 1075) material used for Trench B:

a. Was not installed per "specification".

b. Was used in lieu of compactible clay (earthfill) material.

c. Is 3/4 to 1-1/2 inch size granular or stone material.

d. Is used for filter material for trench drains.

e. Is easy to install in bad weather.

f. Was installed to a depth of 20-ft at the south end.

g. Is not compacted.

2. Second Aspect of the Concern:

"Also, the "B" trench (dam) doesn't contact the Intake structure but; Knoxville said "if the NRC doesn't say anything then we'll just keep quiet" and QC was told not to write an NCR."

DETAILS: continued

V. CLARIFICATION OF CONCERN:. continued

B. Continued

The "problem" is represented by three aspects identified above.

The Underground Barriers (Trenches A&B) were designed and installed for the purpose of protecting the Essential Raw Cooling Water (ERCW) lines from adverse affects of Potential Soil Liquefaction during a seismic event or earthquake. The Underground Barriers do not "keep sand...from liquefying", but are intended to contain (keep from flowing) the liquefiable soil located below the ERCW lines.

The above Concern statement provides a perspective of the reason for the concern, and indicates that the "problem" or cited conditions could adversely affect the satisfactory performance of the Seismic Category I (safety-related) ERCW system.

VI. FINDINGS

A. First Aspect of the Concern:

The following findings relate to the aspect of the Concern regarding the use of 1075 material, and the compaction of that material, for backfill of Trench B:

1. Final Safety Analysis Report (FSAR):

The WBNP FSAR, specifically Section 2.5.4.5 for "Excavations and Backfill" and Section 2.5.5 for "Stability of Slopes", was found to not identify the extent to which the 1075 material was used as backfill for construction of the Trench B. The FSAR does not clearly identify whether or not the 1075 material is acceptable for use as a compacted backfill or substitute for Class "A" backfill. The FSAR does not specifically exclude 1075 material from the Construction Control provisions of Section 2.5.4.5.1.4, such as inplace density and relative density testing.

a. FSAR Section 2.5.4.5.1 (Page 2.5-111), "Earthfill", states:

DETAILS, continued

FINDINGS, continued

A. 1. continued

"The term "earthfill" refers to soil which is obtained from onsite borrow areas and compacted in multiple lifts to form a fill meeting specified standards."

Based on the above FSAR statement, the 1075 material is not "earthfill".

FSAR Subsection 2.5.4.5.1.2 (Page 2.5-115), last paragraph, states:

"The backfill used for Trench B came from borrow areas Trench B, 12, 2C, 13, and the future 161-kV switchyard. Thus, materials from those areas were evaluated for the Trench B design soil properties. Since two different degrees of compaction were also used in Trench B, separate evaluations were made. The first evaluation, shown on Figure 2.5-522, was for Earthfill A which was placed at 95 percent of maximum dry density, and the second evaluation, shown on Figure 2.5-523, was for Earthfill A1 which was placed at 100 percent of maximum dry density. In the second evaluation, the data for sands was deleted from the evaluation, since only fine-grained soils were used for Earthfill A1. Figure 2.5-583 provides a summary of the above borrow evaluations."

The above FSAR statement indicates that only Class A or A1 earthfill was used for Trench B.

FSAR Subsection 2.5.4.5.1.3, "Field Work", last paragraph (Page 2.5-117), states:

"In areas where earthfills with differing compaction requirements adjoin, the compacted fill with the higher degree of compaction is placed prior to the placement of fill of lower density requirements.

The above FSAR statement is referenced as a contradiction in Finding A.5.b.

DETAILS, continued

VI. FINDINGS

A. 1. continued

b. FSAR Section 2.5.4.5.1.4, "Construction Control", states:

"All earthfills are placed in accordance with the provisions of TVA's General Construction Specification No. G-9 for Rolled Earthfill for Dams and Power Plants. The following information summarizes the construction control which is described in that document. This program is also applicable for all engineered granular fills.

All fill operations are accomplished in the presence of a trained inspector. The inspector has the authority to suspend fill operations whenever weather or material conditions are judged unsuitable. His responsibilities include material quality, selection, excavation, hauling, placement, and compaction control. During placement, periodic construction control tests are made to ensure that a suitable fill is obtained. This testing determines soil classification, moisture content, inplace density, relative density (granular fill only), and degree of compaction (earthfill only). The frequency of testing is as specified in General Construction Specification G-9. The inspector may require additional testing to conclusively identify material or check compaction. A project laboratory has been established at the plant site to perform the necessary testing. Project drawings and a series of construction control procedures relay unique construction requirements to the construction personnel."

The term "engineered granular fills" is not defined in the FSAR, therefore, it is not clear if the 1075 is such a material.

The above FSAR statements indicate that "construction control tests" are applicable to "granular fill", specifically "moisture content", "inplace density" and "relative density (granular fill only)".

DETAILS, continued

VI. FINDINGS, continued

A. 1. b, continued

Note the distinction between earthfill and granular fill with respect to reference to "General Construction Specification G-9"; see Findings A.2, below.

c. FSAR Section 2.5.4.5.2 (Page 2.5-117), "Granular Fill", subsection 2.5.4.5.2.1, "General", states:

"Granular fill materials are used at the site for several purposes; such as structural fill, backfill, to establish a working surface, and for road foundations. The material normally obtained from offsite commercial sources. The location and use of any type of material is determined by the engineer for any safety-related feature."

The above FSAR statement applies to 1032 and 1075 granular material jointly, but not individually, for "purposes" used; see Findings A.1.c and A.1.e, below.

d. FSAR subsection 2.5.4.5.2.1 (Page 2.5-118), for "Section 1032 Material", states (in part):

"A granular fill material, consisting of crushed stone or sand and gravel, placed around and below safety-related features in lieu of earth fill in certain locations. The granular fill material is suitable for compaction to a dense, stable mass and consists of sound, durable particles which are graded..."

FSAR subsection 2.5.4.5.2.1 (Page 2.5-119) for "Section 1032 Material", states:

"In areas where this granular material is placed adjacent to an earthfill, the granular fill is placed and compacted prior to the placement of the earthfill. Granular fill is placed and compacted to a relative density as specified on drawings or

DETAILS, continued

VI. FINDINGS, continued

A. 1. c. continued

in construction specifications and as determined by ASTM D 2049. The moisture content of the material is adjusted as necessary to obtain the required relative density. The construction control program for granular fill is discussed in Section 2.5.4.5.2.4."

The above FSAR statements, regarding "1032" granular material, are included in this report for comparison to the statements (below) regarding 1075 material.

e. FSAR section 2.5.4.5.2., "Granular Fill", for "Section 1075 Material" (Page 2.5-120), states:

"Section 1075 Materials -

A free-draining granular fill material, consisting of crushed stone or sand and gravel, frequently used to establish a working surface on top of soil or weathered rock, or to develop a good interface between earthfill and weathered rock, or to act as a surface cover for an area such as a switchyard."

"In areas where the material is used, it is placed and compacted using a procedural specification given on drawings or in construction specifications."

The first statement, above, does not indicate that 1075 material is used for "structural fill" or "backfill", or used "in lieu of earthfill."

The second statement, above, does not indicate that 1075 material is "compacted to a relative density".

See Findings A.1.d. above, for comparison to "1032" granular fill material.

DETAILS, continued

VI. FINDINGS, continued

A. 1. continued

f. FSAR Section 2.5.5.1.2 (Page 2.5-140), "Underground Barrier for Protection Against Potential Soil Liquefaction", third paragraph, states:

"The trenches will be backfilled with soils excavated from the trenches, if acceptable, and soil from approved onsite borrow areas. The method of construction and construction control will be in accordance with the requirements and notes on Figures 2.5-580 and -581. The results of the soils investigation and testing of the borrow materials is described in Section 2.5.5.2.3."

Figures 2.5-580 and -581 are Drawing 10N213-1 (Revision 1) and Drawing 10N213-2 (Revision 2), respectively. The Figure 2.5-581 does not reflect the significant changes, specifically regarding the use of 1075 material, in the current Revision 6 (dated 5/18/84) to Drawing 10N213-2; see Findings A.3.d, A.3.e, and A.8.c.

g. FSAR Section 2.5.5.2.3, "Design Criteria and Analysis for the Underground Barrier...", states (Pages 2.5-147 and -148):

"Figure 2.5-583 shows a loading diagram of how the underground barrier was analyzed. Seven sections of the barrier were analyzed. Figure 2.5-582 shows the locations of the seven sections. The most critical sections were Section 4 for Trench A and Sections 6 and 7 for Trench B."

The "Figure 2.5-583", "Load Diagram" shows the trenches to be "crushed stone" on the bottom, shallow layer and "compacted fill" for the top, deep layer. The "compacted fill" is described as "borrow materials" and 95% and 100% compacted backfill, but not granular material.

"Section 7", as shown in Figure 2.5-582, is at the south end of Trench B.

DETAILS, continued

VI. FINDINGS, continued

A. 1., continued

n. FSAR Figure 2.5-583 shows "Materials Properties" for "1075 Section Material." The "C(TSF)" is shown as zero for both the "Q-Test" and "R&S Test". These are triaxial (Q&R) and direct (S) shear tests. The cohesion (c), in tons per square foot (TSF), is shown to be zero, i.e., lacking in shearing resistance.

For "Underground Barrier Analysis Summary", the Figure shows that Section 7, the south end of Trench B has the lowest safety factor of the seven sections (see Finding A.1.g, above). The "Note 6" for this summary states:

"Section 7 was also checked at the crushed stone/weathered shale interface due to the thick section of 1075 material placed. The factor of safety was 1.02."

The reference to the "thick section of 1075 material" is not quantitatively defined in the Figure. This is the only statement found in the FSAR to indicate the use of 1075 material for more than a shallow bottom layer for Trench B. See Findings A.8 for related findings.

i. FSAR Section 2.5.5.2.3, last paragraph (Page 2.5-148) states:

"Since it was not necessary for the entire barrier to be constructed at the higher compaction level (100%), additional analyses were made to determine what elevation the lower compaction level (95%) could be used. The results of this analysis are given on Figure 2.5-583. Figure 2.5-584 shows the final grading for the area of the underground barrier."

The above statement indicates that the barriers (Trenches) were of either 95% or 100% compacted material. Neither the referenced Figures, nor any