

May 16

FSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-007

Category: 53

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: DIESEL GENERATOR MARGINS ARE INADEQUATE. TVA HAS ADDED DGS TO BROWNS FERRY, SEQUOYAH AND WATTS BAR. EACH TIME A QUESTION IS RAISED, TVA MUST CONDUCT ANOTHER STUDY. TVA ADDS DIESEL GENERATORS WITHOUT UPGRADING LICENSING DOCUMENTS. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

B=0/Diesel generator

*William A. Schaefer* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ---✓--- RLS

OTHERS (SPECIFY) -----

*electric  
Design*

*Bruce P. Lingham* 12/13/85  
NSRS DATE

may 16

PSK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-008

Category: 53

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: DIESEL GENERATORS HAVE RELIABILITY PROBLEMS. CI STATED THAT CORRECTION REQUIRES RELIABILITY PROGRAM, A REDUCTION IN THE NUMBER OF STARTS, ATTENTION TO TESTING, PREVENTATIVE MAINTENANCE UPGRADING, AND MORE INTERACTION WITH INPO, OTHER UTILITIES AND VENDORS TO ESTABLISH RESOLUTION TO PROBLEMS. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

generator problems

*William A. Schuler* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS --- *✓* *PCS*

OTHERS (SPECIFY) -----

*Electric  
Operation*

*Bruce P. Lough* 12/13/85  
NSRS DATE

may 16

PJR

# EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-009

Category: 53

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: DIESEL GENERATORS HAVE RELIABILITY PROBLEMS. CI STATED THAT CORRECTION REQUIRES RELIABILITY PROGRAM, A REDUCTION IN THE NUMBER OF STARTS, ATTENTION TO TESTING, PREVENTATIVE MAINTENANCE UPGRADING, AND MORE INTERACTION WITH INPO, OTHER UTILITIES AND VENDORS TO ESTABLISH RESOLUTION TO PROBLEMS. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

ERT/Diesel Generators

*William J. Schenck* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ---✓--- PCS

OTHERS (SPECIFY) -----

Electrical  
Operation

*Barry J. Lough* 12/13/85  
NSRS DATE

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-010

Category: 53

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: DIESEL GENERATORS HAVE RELIABILITY PROBLEMS. CI STATED THAT CORRECTION REQUIRES RELIABILITY PROGRAM, A REDUCTION IN THE NUMBER OF STARTS, ATTENTION TO TESTING, PREVENTATIVE MAINTENANCE UPGRADING, AND MORE INTERACTION WITH INPO, OTHER UTILITIES AND VENDORS TO ESTABLISH RESOLUTION TO PROBLEMS. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

Berry Diesel generators

*William J. Schuch*  
MANAGER, ERT ~~DEC 07 1984~~  
DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ PCS

OTHERS (SPECIFY) -----

*Electric  
Operations*

*Bruce P. Duffin*  
NSRS 12/13/85  
DATE

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-011

Category: 52

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: ELECTRICAL SEPARATION AND PHYSICAL SEPARATION OF REDUNDANT WIRING AND CABLING AND FOR EQUIPMENT AND COMPONENTS ARE INADEQUATE AT ALL PLANTS. CI EXPRESSED THAT DETAILED REVIEWS NEED TO BE MADE, AND ARE SO EXTENSIVE THAT A CONSULTANT PROBABLY SHOULD BE USED, PROVIDING INDEPENDENCE FROM TVA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

500/2000000 21005

*William A. Schu* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ PCS

OTHERS (SPECIFY) -----

*Electrical  
Install*

*Bruce P. Lefler* 12/13/85  
NSRS DATE

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-012

I-85- -BLU

Category: 52

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: ELECTRICAL SEPARATION AND PHYSICAL SEPARATION OF REDUNDANT WIRING AND CABLING AND FOR EQUIPMENT AND COMPONENTS ARE INADEQUATE AT ALL PLANTS. CI EXPRESSED THAT DETAILED REVIEWS NEED TO BE MADE, AND ARE SO EXTENSIVE THAT A CONSULTANT PROBABLY SHOULD BE USED, PROVIDING INDEPENDENCE FROM TVA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BLU/REDUNDANT WIRING

*William A. Schum* DEC 07 1985

MANAGER, ERT

DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ 205

OTHERS (SPECIFY) -----

*Electrical  
Installed*

*James L. Luff* 12/13/85  
NSRS DATE

may 16

PSIC

# EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-013

Category: 52

Confidentiality: <sup>I-85-122-013</sup> YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: ELECTRICAL SEPARATION AND PHYSICAL SEPARATION OF REDUNDANT WIRING AND CABLING AND FOR EQUIPMENT AND COMPONENTS ARE INADEQUATE AT ALL PLANTS. CI EXPRESSED THAT DETAILED REVIEWS NEED TO BE MADE, AND ARE SO EXTENSIVE THAT A CONSULTANT PROBABLY SHOULD BE USED, PROVIDING INDEPENDENCE FROM TVA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

T50214/Redundant wiring

*William J. Schaefer* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ☒ -----

OTHERS (SPECIFY) -----

*Electric  
Install*

*Barry J. Lofgren* 12/13/85  
NSRS DATE

## EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-015

Category: 13

Confidentiality: YES NO (I&amp;H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: ENVIRONMENTAL QUALIFICATIONS OF ELECTRICAL AND I&C EQUIPMENT AND COMPONENTS IS INADEQUATE. QUALIFICATION WAS OFTEN NOT DONE, OR IF DONE, RECORDS DO NOT EXIST IN MANY CASES, WHICH RESULTS IN MODIFICATION OR REPLACEMENT. CURRENT UPGRADE PROGRAM FOR ENVIRONMENTAL QUALIFICATIONS NEEDS SCRUTINY. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

*Bellevue 2048*

*William A. Schenck* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ☒ PCS

OTHERS (SPECIFY) -----

*Equipment  
Qualification*

*James L. Duffin* 12/13/85  
NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-016

Category: 13

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: ENVIRONMENTAL QUALIFICATIONS OF ELECTRICAL AND I&C EQUIPMENT AND COMPONENTS IS INADEQUATE. QUALIFICATION WAS OFTEN NOT DONE, OR IF DONE, RECORDS DO NOT EXIST IN MANY CASES, WHICH RESULTS IN MODIFICATIONS OR REPLACEMENT. CURRENT UPGRADE PROGRAM FOR ENVIRONMENTAL QUALIFICATIONS NEEDS SCRUTINY. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BED/ERT JALIF

*William J. JALIF* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS --- *PCS*

OTHERS (SPECIFY) -----

*Equipment  
Qualification*

*Barbara L. Dwyer* 12/13/85  
NSRS DATE

May 16

45K

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-017

Category: 52

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: CLASS 1E AND NON-CLASS 1E BATTERIES ARE UNACCEPTABLY SUPPORTS (NO BATTERY TIE DOWNS), AND UNISTRUT SUPPORTS ARE UNACCEPTABLY USED. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

San/Batteries

*William J. Schenck* DEC 07 1995  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ PCS

OTHERS (SPECIFY) -----

*Electrical  
Support*

*James F. Lippert* 12/13/95  
NSRS DATE

may 16

PSR

# EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-018

I-SS- -120

Category: 52

Confidentiality: \_YES \_NO (I&H)

Supervisor Notified: \_\_YES \_\_NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: CLASS 1E AND NON-CLASS 1E BATTERIES ARE UNACCEPTABLY SUPPORTED (NO BATTERY TIE DOWNS), AND UNISTRUT SUPPORTS ARE UNACCEPTABLY USED. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BKR/Batteries

*William J. Schen* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS -----*PCS*

OTHERS (SPECIFY) -----

*Electrical  
Supports*

*James P. Lough* 12/13/85  
NSRS DATE

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-019

Category: 52

Confidentiality: <sup>I-85 - BFN</sup> YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: CLASS 1E AND NON-CLASS 1E BATTERIES ARE UNACCEPTABLY SUPPORTED (NO BATTERY TIE DOWNS), AND UNISTRUT SUPPORTS ARE UNACCEPTABLY USED. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BFN/Batteries

William A. Schenck DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ PCS

OTHERS (SPECIFY) -----

Electrical  
Supports

Brian P. Sullivan 12/13/85  
NSRS DATE

Nov 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-020

Category: 13

Confidentiality: <sup>I-85- -SQN</sup> \_YES \_NO (I&H)

Supervisor Notified: \_\_YES \_\_NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: HUMAN FACTORS ENGINEERING AND/OR REVIEWS HAVE NOT BEEN IMPLEMENTED FOR CONTROL PANELS AND STATIONS. CI EXPRESSED THAT THIS IS A VIOLATION OF NUREG -0700. CI FURTHER STATED THAT THERE ARE TOO MANY POOR ENGINEERING PRACTICES IN THIS AREA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

50214 Nureg-0700

*William J. Schaefer*  
MANAGER, ERT ~~DEC 07 1995~~ DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS <sup>VDCS</sup> -----

OTHERS (SPECIFY) -----

*Design Adequacy*

*Bruce L. Lugin*  
NSRS ~~12/13/95~~ DATE

may 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-021

Category: 13

Confidentiality: I-SS- - b2  
\_YES \_NO (I&H)

Supervisor Notified: \_\_YES \_\_\_NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: HUMAN FACTORS ENGINEERING AND/OR REVIEWS HAVE NOT BEEN IMPLEMENTED FOR CONTROL PANELS AND STATIONS. CI EXPRESSED THAT THIS IS A VIOLATION OF NUREG -0700. CI FURTHER STATED THAT THERE ARE TOO MANY POOR ENGINEERING PRACTICES IN THIS AREA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BELF/NUREG-0700

William J. Schu DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ DCS

OTHERS (SPECIFY) -----

Davis  
adequacy

Bruce L. Dugan 7/13/85  
NSRS DATE

may 16

PSK

# EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-022

Category: 13

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BROWN'S FERRY: HUMAN FACTORS ENGINEERING AND/OR REVIEWS HAVE NOT BEEN IMPLEMENTED FOR CONTROL PANELS AND STATIONS. CI EXPRESSED THAT THIS IS A VIOLATION OF NUREG -0700. CI FURTHER STATED THAT THERE ARE TOO MANY POOR ENGINEERING PRACTICES IN THIS AREA. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

REF/nureg-0700

*William J. Schuman*  
MANAGER, ERT

DEC 07 1985  
DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓ PC

OTHERS (SPECIFY) -----

*Deserri  
Adelquist*

*Barbara P. Lusk*  
NSRS 12/13/85  
DATE

May 16

PSD

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-023

Category: 51

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: OUT OF SERVICE TAGS FOR VALVES, ELECTRICAL EQUIPMENT, ETC., HAVE BEEN VIOLATED EVERYWHERE. THIS PRESENTS AN EXTREMELY SERIOUS PERSONNEL SAFETY PROBLEM. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

Out of service tags

William J. Schenck DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ----- ✓ PCS

OTHERS (SPECIFY) -----

Operation  
Control

Bruce L. Sullivan 12/13/85  
NSRS DATE

May 16

PSK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-025

Category: 13

Confidentiality: <sup>I-85 - - B&N</sup> YES NO (I&H)

Supervisor Notified: \_\_YES \_\_NO

NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE: THERMAL OVERLOAD BYPASS AND INDICATION PROBLEMS INVOLVING REG. GUIDE 1.97. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

BLN / Internal questions

*William J. Schen* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS --- *K. RLS*

OTHERS (SPECIFY) -----

*Electrical  
Design*

*Bruce P. Lippin* 12/2/85  
NSRS DATE

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-024

Category: 13

Confidentiality: <sup>2-85 - 500</sup> YES NO (I&H)

Supervisor Notified: \_\_YES \_\_\_NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: THERMAL OVERLOAD BYPASS AND INDICATION PROBLEMS INVOLVING REG. GUIDE 1.97. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

ERT/thermal overload

*William J. Schaefer* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS <sup>✓</sup> --- ROS

OTHERS (SPECIFY) -----

*electrical  
Design*

*Bruce L. Griffin* 2/13/85  
NSRS DATE

May 16

PSR

# EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50216

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern# XX-85-122-048

I. 85. - SAN

Category: 53

Confidentiality: ☐ Yes ☐ No (I&H)

Supervisor Notified: ☐ Yes ☐ No Nuclear Safety Related ☒ YES

Concern: SEQUOYAH - LACK OF GOOD STATUS SYSTEM (PUNCH- LISTS) FOR COMPLETION OF COMMITMENTS AND COMPLETION OF NRC ACTIONS, AND COMPLETION OF WORK AT SITES. PLANT CONSTRUCTION, PRE-OP ETC. STATUS IS POOR. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN.

SAN/STATUS system

OD. Thew 12/13/85  
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT \_\_\_\_\_

NSRS/ERT \_\_\_\_\_

NSRS ☒ P.C.S

OTHERS (SPECIFY) \_\_\_\_\_

Construct  
Control

Bruce L. Pfeiffer 12/17/85  
NSRS date

may 16

PSC

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50216

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern# XX-85-122-049

I-SS- -B&N

Category: 53

Confidentiality: ☐ Yes ☐ No (I&H)

Supervisor Notified: ☐ Yes ☐ No

Nuclear Safety Related ☒ YES

Concern: BELLEFONTE - LACK OF GOOD STATUS SYSTEM (PUNCH- LISTS) FOR COMPLETION OF COMMITMENTS AND COMPLETION OF NRC ACTIONS, AND COMPLETION OF WORK AT SITES. PLANT CONSTRUCTION, PRE-OP ETC. STATUS IS POOR. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN.

TECH/status system

Orlando 12/13/85  
Manager, ERT date

NSRS has assigned responsibility for investigation of the above concern to:

ERT \_\_\_\_\_

NSRS/ERT \_\_\_\_\_

NSRS ☒ RCS

OTHERS (SPECIFY) \_\_\_\_\_

Construction  
Control

Bruce L. Raglin 12/17/85  
NSRS date

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50221

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-125-006

Category: 15

Confidentiality: J-85 - WBN  
\_YES \_NO (I&H)

Supervisor Notified: YES X NO

NUCLEAR SAFETY RELATED YES

Concern: KNOXVILLE - THE TVA SYSTEM PROCUREMENT MANUAL ALLOWS PROCUREMENT OF IE, SAFETY RELATED, NSSS AND HOLD DEVICES EQUIPMENT TO BE PURCHASED COMMERCIALY, NOT THROUGH QUALIFIED SUPPLIERS, BECAUSE THEY ARE PART OF A LARGER COMPONENT. (NAMES/DETAILS TO THE SPECIFIC CASE ARE KNOWN TO DND AND WITHHELD TO MAINTAIN CONFIDENTIALITY). NUCLEAR POWER CONCERN. IT HAS NO MORE INFORMATION.

equipment procurement

W. J. H. H. DEC 11 1985  
MANAGER, ERT DATE

RS has assigned responsibility for investigation of the above concern

S/ERT \_\_\_\_\_

S ✓ X2

IRS (SPECIFY) \_\_\_\_\_

element  
trial

Bruce L. Daffner 12/17/85  
DATE



TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
EMPLOYEE CONCERN PROGRAM  
NUCLEAR REGULATORY COMMISSION LISTING

| QTC NUMBER                | SUBJECT              | INVEST<br>ORG | DATE<br>REPORT | S<br>U<br>B<br>? | DATE<br>RESPONSE | A<br>C<br>C<br>? | DATE<br>INVEST<br>CLOSED | KEY<br>WORD |
|---------------------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| ** MILESTONE:             |                      |               |                |                  |                  |                  |                          |             |
| IN-86-134-002             | IRN POLICY           | NSRS          | 12/03/85       | .T.              | / /              |                  | / /                      | QA          |
| ** Subtotal **            |                      |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 1 FUEL LOAD |                      |               |                |                  |                  |                  |                          |             |
| EX-85-003-003             | UNAUTH CHNG TO WDREC | ERT           | 07/09/85       | .T.              | 07/24/85         | T                | 07/24/85                 | WELDING     |
| EX-85-049-001             | NO SECURITY BARRIER  | NSRS          | 10/17/85       | .T.              | 11/26/85         | T                | 12/10/85                 | SECURITY    |
| IN-85-001-003             | WELDS UNDER WATER    | ERT           | 07/10/85       | .T.              | 09/23/85         | T                | 09/23/85                 | WELDING     |
| IN-85-010-002             | VIOLATION OF 050 NTS | NSRS          | 11/22/85       | .T.              | / /              |                  | / /                      | HANGERS     |
| IN-85-012-X02             | TENSILE STRNG OF FIT | NSRS          | 08/05/85       | .T.              | / /              |                  | 08/05/85                 | MATERIAL    |
| IN-85-018-004             | SUPV NOT FOLLOW PROC | NSRS          | 11/14/85       | .T.              | / /              |                  | 11/20/85                 | ELECTRICAL  |
| IN-85-021-X05             | WELDER CERTIF FALSIF | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-024-001             | DRWNS & 050 NOTES    | NSRS          | 07/03/85       | .T.              | / /              |                  | / /                      | HANGERS     |
| IN-85-031-001             | ENBD PLTS NOT CORREC | ERT           | 08/20/85       | .T.              | 11/18/85         |                  | / /                      | DESIGN      |
| IN-85-037-001             | CONCRETE ANCHORS     | ERT           | 07/09/85       | .T.              | 09/11/85         | F                | / /                      | CIVIL       |
| IN-85-038-001             | ANALYS OF LARGE PIPE | ERT           | 07/08/85       | .T.              | 09/05/85         | T                | 09/05/85                 | DESIGN      |
| IN-85-039-001             | THML STRS ON PIPING  | ERT           | 07/09/85       | .T.              | 09/05/85         | T                | 09/05/85                 | DESIGN      |
| IN-85-039-002             | STRES&SUPPRT LD PROB | ERT           | 11/08/85       | .T.              | / /              |                  | 11/12/85                 | DESIGN      |
| IN-85-052-001             | DRWNGS & 050 NOTES   | NSRS          | 07/03/85       | .T.              | 07/30/85         | F                | / /                      | HANGERS     |
| IN-85-088-001             | VACUM TEST ON DOORS  | ERT           | 07/09/85       | .F.              | / /              |                  | 07/09/85                 | TESTING     |
| IN-85-091-X02             | NO NCR FOR LOST DOCU | ERT           | 08/26/85       | .T.              | / /              |                  | 10/03/85                 | DOCUMENT    |
| IN-85-130-002             | FIRE SEALS BREACH2D  | ERT           | 07/05/85       | .T.              | 09/13/85         | T                | 09/13/85                 | CONSTRUCTI  |
| IN-85-134-001             | CRIT NOT MET/IDSS WL | ERT           | 11/22/85       | .F.              | / /              |                  | 11/22/85                 | WELDING     |
| IN-85-160-001             | UNREPORTED FIRE      | NSRS          | 11/07/85       | .F.              | / /              |                  | 11/12/85                 | CONSTRUCTI  |
| IN-85-160-002             | UNQUALIFIED PERSONNE | NSRS          | 12/03/85       | .F.              | / /              |                  | 12/11/85                 | CONSTRUCTI  |
| IN-85-169-001             | SYS 62 VALVE CLASS   | ERT           | 07/10/85       | .T.              | 07/26/85         | T                | 07/26/85                 | MATERIAL    |
| IN-85-202-001             | CRACK IN WELD        | ERT           | 07/10/85       | .T.              | / /              |                  | 07/09/85                 | WELDING     |
| IN-85-207-002             | USE OF FISH TAPE     | NSRS          | 11/22/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-85-251-002             | MAINT WITHOUT NCR    | NSRS          | 10/31/85       | .F.              | 12/06/85         | T                | 12/10/85                 | QA          |
| IN-85-260-003             | WELD DOCUMNTATION    | ERT           | 10/07/85       | .F.              | 11/25/85         | T                | 12/10/85                 | WELDING     |
| IN-85-311-008             | CR ENTRANCE FIREDOOR | ERT           | 08/19/85       | .T.              | 09/24/85         | T                | 10/10/85                 | OPERATIONS  |
| IN-85-325-006             | VALV CONT/OPER TRAN  | NSRS          | 10/01/85       | .F.              | / /              |                  | 10/04/85                 | OPERATIONS  |
| IN-85-393-003             | FSAR REQ FOR SUPERV  | NSRS          | 07/03/85       | .T.              | 11/25/85         | T                | 11/27/85                 | OPERATIONS  |
| IN-85-406-001             | UNAUTH CHNG TO WDREC | ERT           | 07/09/85       | .T.              | 07/24/85         | T                | 07/24/85                 | WELDING     |
| IN-85-413-001             | "050"NOTES           | NSRS          | 08/09/85       | .T.              | / /              |                  | 08/09/85                 | HANGERS     |
| IN-85-424-011             | INADEQ UPDT WELD CER | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-424-X13             | FALSIF WELDER CERTIF | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-439-003             | INADEQ CRAFT SUPV    | NSRS          | 10/30/85       | .F.              | / /              |                  | 10/30/85                 | CONSTRUCTI  |
| IN-85-445-008             | PROC DIFFICULT TO KN | NSRS          | 10/23/85       | .F.              | / /              |                  | 10/30/85                 | CRAFT       |
| IN-85-445-010             | EYE TEST INADEQUATE  | NSRS          | 10/28/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-445-013             | 47-050 HARD TO USE   | NSRS          | 10/10/85       | .T.              | / /              |                  | 10/16/85                 | HANGERS     |
| IN-85-457-001             | INADQ REVIEW BY PORC | NSRS          | 10/17/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| IN-85-465-002             | LOOSE CONDUIT        | NSRS          | 09/09/85       | .F.              | 11/14/85         | T                | 11/20/85                 | HANGERS     |
| IN-85-472-002             | NO NCRS ON ERCW LINS | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | QA          |
| IN-85-527-001             | CABLE PULL W/O FUSE  | NSRS          | 11/27/85       | .T.              | / /              |                  | 11/29/85                 | ELECTRICAL  |

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|---------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| IN-85-534-005 | FIRE PROTEC HYDRO TE | NSRS          | 10/02/85       | .F.              | / /              |                  | / /                      | TESTING     |
| IN-85-544-001 | WORK W/O WORKPLAN    | ERT           | 10/22/85       | .F.              | / /              |                  | / /                      | QA          |
| IN-85-544-002 | VIOLATION OF PROCEDU | ERT           | 10/23/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-85-581-002 | WLDRS NOT QUAL ELEC  | NSRS          | 10/17/85       | .T.              | / /              |                  | 10/17/85                 | CONSTRUCTI  |
| IN-85-612-X07 | WELDER CERTIF FALSIF | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-671-002 | NOT ISSUING IRN/WRN  | NSRS          | 12/03/85       | .T.              | / /              |                  | / /                      | CIVIL       |
| IN-85-676-001 | DISAGREE W/TVA POLIC | NSRS          | 10/31/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-85-682-005 | MGT ALLOW INSP HARAS | NSRS          | 11/27/85       | .F.              | / /              |                  | / /                      | QA          |
| IN-85-684-001 | DEFECTIVE TUBE STEEO | NSRS          | 09/16/85       | .F.              | / /              |                  | 09/16/85                 | MATERIAL    |
| IN-85-688-004 | PREVENT OF CORRECTIV | NSRS          | 12/09/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-85-770-002 | PROC FOR CER NOT PER | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-770-003 | UNCERTIFIED WELDERS  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-770-X07 | WELDERS CERT FALSIFI | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-778-X07 | WELDER CERT CARD FAL | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-795-001 | COMPRESS FITTING     | ERT           | 08/07/85       | .T.              | 10/07/85         | F                | / /                      | INSTRUMENT  |
| IN-85-795-002 | COMPRESS FITTING     | ERT           | 08/07/85       | .T.              | 10/07/85         | F                | / /                      | INSTRUMENT  |
| IN-85-845-001 | SYS43 UNIS NOT ACHD  | NSRS          | 12/04/85       | .F.              | / /              |                  | / /                      | CIVIL       |
| IN-85-847-006 | CRFT SUP ALW UNAP PL | NSRS          | 10/29/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-85-850-002 | QUANTITY VS. QUALITY | NSRS          | 11/07/85       | .F.              | / /              |                  | 11/12/85                 | QA          |
| IN-85-853-X02 | VIOLAT TVA PROCEDURE | ERT           | 10/12/85       | .F.              | / /              |                  | 10/18/85                 | QA          |
| IN-85-858-001 | QUANTITY VS QUALITY  | NSRS          | 12/09/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-85-897-001 | INEXP CRAFTSMEN      | NSRS          | 11/07/85       | .T.              | / /              |                  | 11/12/85                 | CRAFT       |
| IN-85-913-004 | CONSTRUCT VIOLATIONS | NSRS          | 11/26/85       | .F.              | / /              |                  | / /                      | QA          |
| IN-85-915-003 | DRAWING CONTROL      | NSRS          | 10/22/85       | .T.              | / /              |                  | / /                      | DOCUMENT    |
| IN-85-965-001 | WELDOR CER BACKDATED | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-977-001 | TAPE NOT REPL ON RCS | NSRS          | 10/10/85       | .F.              | / /              |                  | / /                      | QA          |
| IN-85-977-002 | DOCUMENT OF TCS/SIS  | NSRS          | 10/03/85       | .T.              | / /              |                  | / /                      | DOCUMENT    |
| IN-86-055-003 | HYDRAZINE SPILL      | NSRS          | 10/17/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| IN-86-068-002 | RETUBIN OF HEAT EXCH | ERT           | 11/05/85       | .T.              | / /              |                  | / /                      | MAINTENANC  |
| IN-86-081-001 | INADEQ PLANT SYS STA | NSRS          | 11/19/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| IN-86-087-003 | DELAY IN CARS/DRS    | NSRS          | 12/09/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-86-087-004 | DIFFERENCE IN Q-LIST | NSRS          | 10/04/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-86-090-001 | DIFFERENCE IN Q-LIST | NSRS          | 10/04/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-86-090-002 | DELAY IN CARS/DRS    | NSRS          | 12/09/85       | .T.              | 12/09/85         | T                | / /                      | QA          |
| IN-86-090-003 | SIS APPROVAL W/O REV | NSRS          | 10/17/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| IN-86-098-001 | DELAY IN CAR/DR      | NSRS          | 12/09/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-86-102-001 | REQ FOR CONDUIT INSU | NSRS          | 10/11/85       | .T.              | / /              |                  | / /                      | HANGERS     |
| IN-86-102-002 | NO ATTACH D/CONDUIT  | NSRS          | 10/14/85       | .F.              | / /              |                  | 10/16/85                 | CONSTRUCTI  |
| IN-86-103-001 | NO ATTACH D/CONDUIT  | NSRS          | 10/11/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-86-103-002 | REMOVAL OF INSULATIO | NSRS          | 11/13/85       | .F.              | / /              |                  | 11/15/85                 | CONSTRUCTI  |
| IN-86-112-001 | USE OF TOOLS NOT DOC | NSRS          | 12/12/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| IN-86-135-003 | LINES NOT INSPECTED  | NSRS          | 12/09/85       | .T.              | / /              |                  | / /                      | HANGERS     |
| IN-86-143-002 | WELDER CERT BACKDATE | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-86-155-004 | WELDS MAY NOT INSPEC | NSRS          | 10/22/85       | .F.              | / /              |                  | 10/22/85                 | WELDING     |
| IN-86-167-005 | WELDER REQUAL BACKDT | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-86-167-X06 | WELDER CERT CARD FAL | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |

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|----------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| IN-86-210-001  | HEAT EXCH TUBES INAD | ERT           | 11/05/85       | .T.              | / /              |                  | / /                      | DESIGN      |
| IN-86-221-004  | CLEANERS NOT APPVD   | NSRS          | 10/10/85       | .T.              | 12/06/85         | T                | 12/12/85                 | MATERIAL    |
| IN-86-226-001  | HARAS FOR REP QC     | NSRS          | 11/11/85       | .T.              | / /              |                  | / /                      | QA          |
| IN-86-259-004  | INADEQ CABLE PULL    | NSRS          | 10/31/85       | .T.              | / /              |                  | 11/04/85                 | ELECTRICAL  |
| NS-85-001-001  | INACCUR WELD INSPECT | ERT           | 08/13/85       | .T.              | 09/27/85         | F                | / /                      | WELDING     |
| PH-85-003-021  | ENG EVAL NOT CONDUCT | NSRS          | 10/10/85       | .T.              | / /              |                  | 10/16/85                 | QA          |
| PH-85-006-001  | CHANGES TO 050 NOTES | NSRS          | 08/09/85       | .F.              | / /              |                  | 08/09/85                 | HANGERS     |
| PH-85-012-001  | INSPECT OF WELDS     | ERT           | 07/19/85       | .T.              | / /              |                  | 07/19/85                 | WELDING     |
| PH-85-018-001  | AUDIT FINDS WITHHELD | ERT           | 07/10/85       | .F.              | / /              |                  | 07/10/85                 | QA          |
| WI-85-003-001  | FALSE WELD CERTF CRD | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| WI-85-003-X02  | WELDER CERT CARD FAL | ERT/OGC       | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| WI-85-013-003  | INSPECT THRU PAINT   | ERT           | 11/06/85       | .T.              | / /              |                  | / /                      | WELDING     |
| WI-85-016-001  | PROCEDURE VIOLATIONS | ERT           | 11/01/85       | .F.              | / /              |                  | / /                      | CIVIL       |
| WI-85-055-001  | WELDER RECERTIFICATI | ERT           | 09/24/85       | .T.              | / /              |                  | 10/02/85                 | WELDING     |
| WI-85-056-001  | NOT FOLLOW CODE REQU | ERT           | 09/24/85       | .T.              | / /              |                  | 10/02/85                 | WELDING     |
| ** Subtotal ** |                      |               |                |                  |                  |                  |                          |             |

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\*\* MILESTONE: 2 CRITICALITY

|               |                      |      |          |     |          |   |          |            |
|---------------|----------------------|------|----------|-----|----------|---|----------|------------|
| IN-85-016-003 | TUBING NOT CLAMPED   | NSRS | 09/03/85 | .T. | / /      |   | / /      | HANGERS    |
| IN-85-025-001 | INCORE THERMO TEST   | NSRS | 07/03/85 | .F. | / /      |   | / /      | TESTING    |
| IN-85-064-002 | SHUTDN BDS TOP OPEN  | NSRS | 06/28/85 | .T. | 07/22/85 | T | 07/22/85 | ELECTRICAL |
| IN-85-069-001 | INADEQUATE INSPECTS  | ERT  | 07/10/85 | .T. | 10/10/85 | F | / /      | HANGERS    |
| IN-85-106-001 | MN STM LOADS SUPPORT | ERT  | 07/11/85 | .F. | / /      |   | 07/11/85 | DESIGN     |
| IN-85-109-002 | BOLTS REPLAC BY WELD | NSRS | 11/07/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-186-002 | INSL ON CONDT & CABL | ERT  | 07/10/85 | .F. | 09/24/85 | T | 10/10/85 | ELECTRICAL |
| IN-85-216-001 | WELDING SEQUENCE     | ERT  | 07/10/85 | .T. | 08/05/85 | F | / /      | WELDING    |
| IN-85-217-001 | CONDENS POTS, #1     | ERT  | 07/15/85 | .T. | / /      |   | 07/14/85 | DESIGN     |
| IN-85-246-001 | INSUFFNT MOVEMT/NVR  | NSRS | 08/09/85 | .F. | / /      |   | 08/09/85 | DESIGN     |
| IN-85-281-001 | DIFFUSER FLOW        | ERT  | 07/05/85 | .T. | 07/25/85 | T | 07/25/85 | DESIGN     |
| IN-85-281-003 | TRNSM NOT READ SAME  | NSRS | 08/15/85 | .T. | 12/04/85 | T | 12/10/85 | DESIGN     |
| IN-85-415-002 | CONCRETE ERCW LINES  | NSRS | 07/11/85 | .F. | / /      |   | 07/11/85 | MECHANICAL |
| IN-85-439-006 | SUBSTD WEAK CONCRETE | NSRS | 11/07/85 | .F. | / /      |   | / /      | CIVIL      |
| IN-85-460-003 | GOUGE IN LINE, 1#    | ERT  | 08/29/85 | .T. | 09/24/85 | T | 10/17/85 | MECHANICAL |
| IN-85-460-X05 | EXCAV ARC STRK SYS72 | ERT  | 10/21/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-485-X01 | SOFT CONCRETE        | NSRS | 11/07/85 | .F. | / /      |   | / /      | CIVIL      |
| IN-85-534-001 | FIRE PROTECT SYSTEM  | NSRS | 10/08/85 | .F. | / /      |   | / /      | DESIGN     |
| IN-85-601-001 | INADEQ SURVL INSTRUC | NSRS | 10/09/85 | .T. | / /      |   | 10/09/85 | QA         |
| IN-85-616-001 | RO NOT AVAILABLE     | NSRS | 08/30/85 | .T. | 10/16/85 | T | 10/16/85 | OPERATIONS |
| IN-85-802-001 | TARGET ROCK VALVES   | NSRS | 10/25/85 | .T. | / /      |   | / /      | DESIGN     |
| IN-85-845-002 | SYS43 HANGER DESIGN  | NSRS | 11/20/85 | .T. | / /      |   | / /      | HANGERS    |
| IN-86-122-001 | CRACKS IN WF 33 BEAM | NSRS | 10/10/85 | .T. | / /      |   | 10/16/85 | MATERIAL   |
| IN-86-259-003 | PVC CONDUITS BROKEN  | NSRS | 12/03/85 | .F. | / /      |   | 12/06/85 | ELECTRICAL |
| XX-85-020-001 | SQN/ECNS APPLICABILI | NSRS | 11/19/85 | .F. | / /      |   | 11/19/85 | OPERATIONS |

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|--------------------------|-----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| ** Subtotal **           |                       |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 3 5% POWER |                       |               |                |                  |                  |                  |                          |             |
| IN-85-001-002            | WELD ROD CONTROL      | ERT           | 07/10/85       | .F.              | / /              |                  | 07/06/85                 | WELDING     |
| IN-85-016-001            | BROKN CONCRE AT PLAT  | NSRS/ERT      | 08/05/85       | .F.              | / /              |                  | 08/04/85                 | CIVIL       |
| IN-85-021-003            | BACKDATE CERTF CARDS  | ERT           | 08/19/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-027-002            | COMPUTER ANALYSIS     | ERT           | 08/01/85       | .T.              | 11/20/85         | F                | / /                      | DESIGN      |
| IN-85-052-008            | PROCED FOR WELD RODS  | ERT           | 07/10/85       | .T.              | 12/16/85         | T                | / /                      | WELDING     |
| IN-85-064-001            | SPRAY ON SHUTDN BDS   | NSRS          | 06/28/85       | .T.              | / /              |                  | 06/28/85                 | ELECTRICAL  |
| IN-85-086-001            | STM GEN MATERIALS     | ERT           | 07/10/85       | .F.              | / /              |                  | 07/10/85                 | MATERIAL    |
| IN-85-108-001            | SYS 68 PIPING         | ERT           | 07/12/85       | .F.              | / /              |                  | 07/12/85                 | MATERIAL    |
| IN-85-113-003            | WELDER CERTIFICATION  | ERT           | 07/10/85       | .T.              | 11/12/85         | T                | 11/20/85                 | WELDING     |
| IN-85-140-001            | OPER WATCH VS PAPER   | NSRS          | 08/30/85       | .T.              | 10/16/85         | T                | 10/16/85                 | OPERATIONS  |
| IN-85-142-003            | UNFOLLOWED WORK PLAN  | NSRS          | 12/03/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| IN-85-186-004            | BOARDS IN ELEC PANEL  | ERT           | 07/05/85       | .F.              | 09/23/85         | T                | 09/23/85                 | ELECTRICAL  |
| IN-85-211-001            | ERCW LINE LEAK        | NSRS          | 06/27/85       | .F.              | / /              |                  | 06/27/85                 | MECHANICAL  |
| IN-85-221-001            | IMPROPER VALVE OPER   | ERT           | 07/05/85       | .T.              | 09/23/85         | T                | 09/23/85                 | OPERATIONS  |
| IN-85-337-002            | WELD ROD CONTROL      | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-346-003            | WELD CERTIFICATIONS   | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-352-001            | UPDATE WELD CERTIFIC  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-388-006            | HEAT CODE TRACEABILI  | NSRS          | 07/03/85       | .T.              | 07/26/85         | T                | 07/26/85                 | MATERIAL    |
| IN-85-424-004            | STMFIT PERFM WELDING  | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-424-006            | ACCOUNT OF WELD RODS  | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-453-007            | INADEQ CERTF OF WELD  | ERT           | 08/19/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-463-007            | DELAY IN DOCUMT DRWS  | NSRS          | 11/22/85       | .F.              | / /              |                  | 11/27/85                 | DOCUMENT    |
| IN-85-465-001            | LINES CLOSE TO HANGR  | NSRS          | 07/30/85       | .T.              | 08/09/85         | T                | 09/08/85                 | MECHANICAL  |
| IN-85-493-004            | INADEQ WELD CERTIFIC  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-501-001            | UNUSED WLD RDS DISPO  | ERT           | 09/03/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-532-004            | WELDER RECERTIFICATE  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-532-005            | RECERT W/O VERIFICAT  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-534-002            | FIRE PROT LINES       | NSRS          | 10/22/85       | .F.              | / /              |                  | 10/22/85                 | DESIGN      |
| IN-85-540-001            | INADEQ WELD CERTIFICA | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-543-002            | INADEQ WELD CERTIFIC  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-554-001            | INCOMP STAIN STEL LN  | NSRS          | 09/03/85       | .F.              | / /              |                  | 09/03/85                 | CONSTRUCTI  |
| IN-85-579-001            | INCOMPLETE WELD       | ERT           | 12/03/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-612-006            | INADEQ WELD CERTIFIC  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-671-004            | WELDS NOT PROP INSPE  | NSRS          | 10/22/85       | .T.              | / /              |                  | 10/22/85                 | WELDING     |
| IN-85-705-001            | UNQUALIFIED PERSONNE  | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| IN-85-725-X14            | INADQ RECERT PROG     | ERT           | 11/05/85       | .F.              | / /              |                  | / /                      | WELDING     |
| IN-85-725-X15            | TEST PLATES INADQ     | ERT           | 11/05/85       | .F.              | / /              |                  | / /                      | WELDING     |
| IN-85-778-001            | WELDER CERTIFICATION  | ERT           | 09/26/85       | .T.              | / /              |                  | 10/15/85                 | WELDING     |
| IN-85-824-002            | UNAPPROV BEND PROCED  | ERT           | 08/23/85       | .T.              | 10/18/85         | T                | 10/30/85                 | QA          |
| IN-85-845-004            | IMPROPER WELDING      | NSRS          | 10/10/85       | .F.              | / /              |                  | 10/16/85                 | WELDING     |
| IN-86-055-002            | LEAKING PIPE          | NSRS          | 11/22/85       | .F.              | / /              |                  | 11/27/85                 | MAINTENANC  |
| IN-86-083-003            | PRODUCTION VS QUALIT  | NSRS          | 12/05/85       | .F.              | / /              |                  | / /                      | TESTING     |

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|----------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| IN-86-119-001  | INADEQUATE CONDUITS  | NSRS          | 10/09/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-86-169-001  | CONDUIT HEAT DAMAGED | NSRS          | 11/26/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-86-173-001  | DESIGN CALCULATIONS  | NSRS          | 10/28/85       | .T.              | / /              |                  | / /                      | DESIGN      |
| IN-86-205-001  | ERCW UNSUITABLE      | NSRS          | 12/03/85       | .F.              | / /              |                  | 12/11/85                 | MECHANICAL  |
| IN-86-259-006  | INADQ SEPAR OF CABLE | NSRS          | 11/01/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-86-262-003  | EXCEED MAX PULL TENS | NSRS          | 10/31/85       | .T.              | / /              |                  | 11/04/85                 | ELECTRICAL  |
| IN-86-268-003  | IMPROPER INSTAL CABL | NSRS          | 11/01/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  |
| IN-86-291-007  | SECURITY CLEAR PERS  | NSRS          | 12/03/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| PH-85-001-002  | INST LNS SLOPE PROB  | ERT           | 07/06/85       | .T.              | 09/20/85         | T                | 09/23/85                 | INSTRUMENT  |
| WI-85-053-003  | IMPORP WELDING DOCUM | NSRS          | 11/14/85       | .T.              | / /              |                  | / /                      | WELDING     |
| WI-85-053-006  | TEST DIR NOT QUAL    | NSRS          | 10/25/85       | .F.              | / /              |                  | / /                      | CONSTRUCTI  |
| WI-85-054-003  | DRAINS PLUGGED UP    | NSRS          | 11/22/85       | .F.              | / /              |                  | 11/27/85                 | MECHANICAL  |
| ** Subtotal ** |                      |               |                |                  |                  |                  |                          |             |

\*\* MILESTONE: 5 100% POWER

|                |                      |      |          |     |          |   |          |            |
|----------------|----------------------|------|----------|-----|----------|---|----------|------------|
| IN-85-010-004  | FIRE PROT PIPNG DSN  | ERT  | 09/16/85 | .F. | / /      |   | 09/24/85 | DESIGN     |
| IN-85-021-002  | SYS77 DRAINS IN FLR  | ERT  | 08/23/85 | .T. | / /      |   | 08/30/85 | DESIGN     |
| IN-85-218-001  | APPROVAL OF AS-BUILT | ERT  | 07/29/85 | .T. | 08/22/85 | T | 08/22/85 | INSTRUMENT |
| IN-85-407-001  | INACCURATE Q-LIST    | NSRS | 10/04/85 | .T. | / /      |   | / /      | DESIGN     |
| IN-85-688-003  | VALIDITY OF CRIT SYS | NSRS | 10/04/85 | .T. | / /      |   | / /      | DESIGN     |
| IN-85-945-001  | ELEC MANHOLES DISORG | NSRS | 10/22/85 | .T. | / /      |   | / /      | ELECTRICAL |
| IN-85-998-002  | IRN PROG NEEDS IMPRO | NSRS | 12/03/85 | .T. | / /      |   | / /      | QA         |
| IN-86-087-002  | EFFECT OF QA DEPT    | NSRS | 11/19/85 | .F. | / /      |   | 11/21/85 | QA         |
| ** Subtotal ** |                      |      |          |     |          |   |          |            |

\*\* MILESTONE: 6 01/01/86

|                |                      |      |          |     |          |   |          |            |
|----------------|----------------------|------|----------|-----|----------|---|----------|------------|
| EX-85-012-001  | UNQUALIFIED PERSONNE | ERT  | 09/28/85 | .T. | / /      |   | / /      | CONSTRUCTI |
| IN-85-078-001  | UO/SAFTY RELATE SYST | NSRS | 10/14/85 | .F. | / /      |   | 10/16/85 | OPERATIONS |
| IN-85-196-003  | VALVE OPER INADEQ    | ERT  | 08/24/85 | .T. | 11/25/85 | T | 12/10/85 | OPERATIONS |
| IN-85-272-004  | FIREPROOFING CABLES  | NSRS | 12/10/85 | .T. | / /      |   | 12/12/85 | DESIGN     |
| IN-85-352-002  | NO PORT WELD OVENS   | ERT  | 11/27/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-424-001  | NO PORT OVENS        | ERT  | 11/27/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-453-009  | PASS OF WELD ROD     | ERT  | 11/27/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-454-004  | PASS OF WELD ROD     | ERT  | 11/27/85 | .T. | / /      |   | / /      | WELDING    |
| IN-85-496-002  | LINER OF ERCW PIPING | NSRS | 10/03/85 | .F. | / /      |   | / /      | MECHANICAL |
| IN-85-618-004  | DAMAGED INST TUBING  | NSRS | 08/12/85 | .T. | / /      |   | / /      | CONSTRUCTI |
| IN-85-825-002  | CLAIRTY IN PROCEDURE | NSRS | 10/22/85 | .F. | / /      |   | 10/22/85 | OPERATIONS |
| IN-85-913-001  | ELECT JUNCTION BOXES | NSRS | 11/26/85 | .F. | / /      |   | / /      | ELECTRICAL |
| IN-85-913-002  | ELECT JUNCTION BOXES | NSRS | 11/26/85 | .F. | / /      |   | / /      | ELECTRICAL |
| ** Subtotal ** |                      |      |          |     |          |   |          |            |

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|-----------------------------|-------------------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| ** MILESTONE: 6 09/02/85    |                               |               |                |                  |                  |                  |                          |             |
| IN-85-020-001               | IMPROP INSTAL REDHDS NSRS/ERT |               | 08/15/85       | .T.              | / /              |                  | / /                      | CIVIL       |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 1ST REFUEL  |                               |               |                |                  |                  |                  |                          |             |
| IN-85-211-002               | ERCW LINE NOT STAINL NSRS     |               | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  |
| IN-85-234-001               | REQUIRE FOR WELD ROD ERT      |               | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 I85-166W N  |                               |               |                |                  |                  |                  |                          |             |
| IN-86-145-002               | CONCRETE LINING APAR NSRS     |               | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 IN85-052008 |                               |               |                |                  |                  |                  |                          |             |
| EX-85-021-001               | INADEQUAT ACCOUNTABI ERT      |               | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 IN85-113003 |                               |               |                |                  |                  |                  |                          |             |
| EX-85-021-002               | VERIFI PROCESS/WELD ERT       |               | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-426-002               | INADEQ WELD CERTIFIC ERT      |               | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-815-001               | CERTIFICATI OF WELDR ERT      |               | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| IN-85-835-002               | WELDING CERTIFICATIO ERT      |               | 09/26/85       | .T.              | / /              |                  | 10/03/85                 | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 IN85-150001 |                               |               |                |                  |                  |                  |                          |             |
| IN-86-167-001               | NO TRACEABIL OF RODS ERT      |               | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 IN85-352002 |                               |               |                |                  |                  |                  |                          |             |
| IN-85-441-003               | NO PORT WELD OVENS ERT        |               | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 IN85-406001 |                               |               |                |                  |                  |                  |                          |             |
| IN-85-445-002               | UNAUT ACCS TO WLD SY ERT      |               | 08/27/85       | .T.              | / /              |                  | 08/27/85                 | WELDING     |
| IN-85-458-007               | CHNG OF WELD STATUS ERT       |               | 08/27/85       | .T.              | / /              |                  | 08/27/85                 | WELDING     |
| ** Subtotal **              |                               |               |                |                  |                  |                  |                          |             |

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|-----------------------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|---|
| ** MILESTONE: 6 IN85-415002 |                      |               |                |                  |                  |                  |                          |             |   |
| IN-85-196-004               | INPROP INSTAL PIPING | NSRS          | 10/11/85       | .F.              | / /              |                  | 10/16/85                 | MATERIAL    | 1 |
| IN-85-442-X12               | LINING LOSS IN PIPE  | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-589-001               | LINER ON ERCW LINE   | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-713-004               | CONCRETE LIN IN PIPE | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-846-002               | GOUT LINER/SAFTY HAZ | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| ** Subtotal **              |                      |               |                |                  |                  |                  |                          |             |   |
| ** MILESTONE: 6 NO DATE     |                      |               |                |                  |                  |                  |                          |             |   |
| EX-85-039-003               | DESIGN DEFICIENCY    | NSRS          | 11/07/85       | .T.              | / /              |                  | / /                      | WELDING     | 1 |
| EX-85-042-003               | WELDERS REQUALIFICAT | ERT           | 10/23/85       | .T.              | / /              |                  | 10/30/85                 | WELDING     | 1 |
| IN-85-001-005               | "SHODDY WORKMANSHIP" | NSRS          | 12/10/85       | .T.              | / /              |                  | 12/12/85                 | WELDING     | 1 |
| IN-85-007-003               | VENDOR WELDS INSPECT | NSRS          | 12/10/85       | .T.              | / /              |                  | 12/12/85                 | WELDING     | 1 |
| IN-85-103-001               | IEB 79-02            | NSRS          | 08/09/85       | .T.              | / /              |                  | 08/09/85                 | DESIGN      | 1 |
| IN-85-198-001               | UNCOVERED CABLE TRAY | NSRS          | 12/04/85       | .T.              | / /              |                  | 12/09/85                 | CONSTRUCTI  | 1 |
| IN-85-279-005               | NO TRACKING SYSTEM   | NSRS          | 11/13/85       | .T.              | / /              |                  | 11/15/85                 | DESIGN      | 1 |
| IN-85-289-006               | VERMASCO APPL PREMAT | NSRS          | 11/27/85       | .T.              | / /              |                  | 11/29/85                 | ELECTRICAL  | 1 |
| IN-85-337-001               | ERCW LN W/CEMENT LIN | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-373-001               | DAMAGED CABLE        | NSRS          | 06/28/85       | .T.              | 07/25/85         | T                | 07/25/85                 | ELECTRICAL  | 1 |
| IN-85-424-007               | LACK OF WELD ROD CON | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     | 1 |
| IN-85-426-001               | UNREQ PORT OVENS     | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     | 1 |
| IN-85-532-006               | OVERSIZED WELDS      | NSRS          | 08/16/85       | .T.              | / /              |                  | / /                      | WELDING     | 1 |
| IN-85-543-004               | DETERIORIATE STEEL   | NSRS          | 07/29/85       | .F.              | 09/26/85         | T                | 07/29/85                 | CONSTRUCTI  | 1 |
| IN-85-630-003               | ERCW LINE IMPROP INS | NSRS          | 11/19/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-630-004               | INADQ DOC FOR ERCW   | NSRS          | 11/19/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-85-877-001               | LIN ACPT WITH DEFAUL | NSRS          | 12/12/85       | .F.              | / /              |                  | 12/12/85                 | QA          | 1 |
| IN-85-915-002               | DRAWING CONTROL      | NSRS          | 10/17/85       | .F.              | / /              |                  | 10/17/85                 | DOCUMENT    | 1 |
| IN-85-955-001               | PWR LOST SYST INOPER | NSRS          | 12/09/85       | .T.              | / /              |                  | 12/12/85                 | DESIGN      | 1 |
| IN-85-964-003               | IMPROP MAT/EQUIP USE | NSRS          | 12/10/85       | .F.              | / /              |                  | 12/12/85                 | MATERIAL    | 1 |
| IN-85-964-X06               | USE OF "SUPERGLUE"   | NSRS          | 12/04/85       | .F.              | / /              |                  | 12/11/85                 | CONSTRUCTI  | 1 |
| IN-86-108-001               | DRAWINGS NOT CURRENT | NSRS          | 11/01/85       | .F.              | / /              |                  | 11/04/85                 | DOCUMENT    | 1 |
| IN-86-110-001               | INADQ ICE LOADING    | NSRS          | 10/25/85       | .T.              | / /              |                  | 10/30/85                 | DESIGN      | 1 |
| IN-86-150-001               | TRACEABILITY NOT ATT | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     | 1 |
| IN-86-190-003               | ANCHOR NOT TEST INDI | ERT           | 10/24/85       | .T.              | / /              |                  | 10/30/85                 | CIVIL       | 1 |
| IN-86-199-001               | CAB PULL/REQ PER QCI | NSRS          | 10/31/85       | .T.              | / /              |                  | 11/04/85                 | ELECTRICAL  | 1 |
| IN-86-200-003               | SUPPORT NOT SAFE     | NSRS          | 12/11/85       | .F.              | / /              |                  | 12/12/85                 | CIVIL       | 1 |
| IN-86-201-001               | CAB PULL LIMIT EXCEE | NSRS          | 10/31/85       | .T.              | / /              |                  | 11/04/85                 | ELECTRICAL  | 1 |
| IN-86-221-001               | RED HEADS NOT REMOVE | NSRS          | 12/09/85       | .T.              | / /              |                  | 12/12/85                 | CIVIL       | 1 |
| IN-86-232-001               | REPAIR ERCW VIOLAT   | NSRS          | 10/03/85       | .F.              | / /              |                  | / /                      | MECHANICAL  | 1 |
| IN-86-259-001               | FAILURF SE FUSE LIN  | NSRS          | 10/31/85       | .T.              | / /              |                  | 11/04/85                 | ELECTRICAL  | 1 |
| IN-86-259-005               | OVERFILLED CABLE TRA | NSRS          | 11/14/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  | 1 |
| IN-86-259-X11               | TVA PROC NO IEEE STD | NSRS          | 11/14/85       | .F.              | / /              |                  | / /                      | DESIGN      | 1 |
| IN-86-262-002               | OVERCROWDING CABLES  | NSRS          | 11/14/85       | .T.              | / /              |                  | / /                      | ELECTRICAL  | 1 |
| IN-86-266-X09               | LACK OF COVERAGE     | NSRS          | 10/31/85       | .F.              | / /              |                  | 11/04/85                 | ELECTRICAL  | 1 |
| IN-86-290-001               | IRNS NOT QUAL RECORD | NSRS          | 12/03/85       | .T.              | / /              |                  | / /                      | QA          | 1 |

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|-----------------------------|----------------------|---------------|----------------|------------------|------------------|------------------|--------------------------|-------------|
| IN-86-305-002               | NO FIRE DAMPERS      | NSRS          | 12/10/85       | .F.              | / /              |                  | 12/10/85                 | DESIGN      |
| IN-86-314-004               | INADQ CABLE SEPARATI | NSRS          | 11/27/85       | .T.              | / /              |                  | 11/29/85                 | ELECTRICAL  |
| WI-85-040-001               | NCR FOR ERCW LINE    | NSRS          | 11/19/85       | .F.              | / /              |                  | / /                      | MECHANICAL  |
| WI-85-040-002               | INADQ PROC/INSP PLAN | NSRS          | 11/19/85       | .F.              | / /              |                  | / /                      | MECHANICAL  |
| WI-85-041-001               | WELD MAT INADEQUATE  | ERT           | 11/27/85       | .T.              | / /              |                  | / /                      | WELDING     |
| WI-85-084-001               | WELDER CERTIFICATION | ERT           | 11/12/85       | .T.              | / /              |                  | / /                      | WELDING     |
| ** Subtotal **              |                      |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 PH85-001002 |                      |               |                |                  |                  |                  |                          |             |
| IN-85-119-001               | IMPROPER LINE INSTAL | ERT           | 09/18/85       | .T.              | 10/22/85         | T                | 10/30/85                 | INSTRUMENT  |
| ** Subtotal **              |                      |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 6 U2 FUEL LD  |                      |               |                |                  |                  |                  |                          |             |
| IN-85-173-001               | LEAK IN SPRINK SYS   | ERT           | 08/13/85       | .F.              | / /              |                  | 08/13/85                 | MATERIAL    |
| IN-85-189-002               | ACCESS TO VALVES/#2  | NSRS          | 10/04/85       | .F.              | / /              |                  | 10/04/85                 | DESIGN      |
| IN-85-246-005               | RUSTED WELDS/#2/RB   | ERT           | 10/24/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-250-001               | INSP PERF W/O WK REL | NSRS          | 11/27/85       | .T.              | / /              |                  | 11/29/85                 | HANGERS     |
| IN-85-530-001               | WLDS NOT ACCRD PROCD | NSRS          | 08/15/85       | .F.              | / /              |                  | 08/15/85                 | WELDING     |
| IN-85-615-001               | OBSTRUCTED ACCESS    | NSRS          | 10/04/85       | .F.              | / /              |                  | 10/04/85                 | DESIGN      |
| IN-86-155-002               | HANGER UNACCEP WELDS | NSRS          | 11/27/85       | .F.              | / /              |                  | 11/29/85                 | WELDING     |
| ** Subtotal **              |                      |               |                |                  |                  |                  |                          |             |
| ** MILESTONE: 7 N/A         |                      |               |                |                  |                  |                  |                          |             |
| EX-85-008-001               | UNQUAL SUBJOURNEYMEN | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| EX-85-009-001               | SUBSTN WK BY SUBJRMN | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| EX-85-010-002               | UNQAUL SUBJOURNEYMEN | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| IN-85-021-001               | TUBE BENDERS         | ERT           | 07/27/85       | .T.              | 10/22/85         | T                | 10/30/85                 | CONSTRUCTI  |
| IN-85-032-001               | PIPING CALCULATIONS  | ERT           | 11/26/85       | .F.              | / /              |                  | 11/29/85                 | DESIGN      |
| IN-85-091-001               | LOST DOCUMENTATION   | ERT           | 09/16/85       | .T.              | / /              |                  | / /                      | DOCUMENT    |
| IN-85-130-001               | UNQUILIFIED PERSONNE | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | CONSTRUCTI  |
| IN-85-277-001               | INSTAL PIPE W/O DRWG | NSRS          | 11/27/85       | .T.              | / /              |                  | 11/29/85                 | CONSTRUCTI  |
| IN-85-278-002               | INADQ DOCUMENT CONTR | NSRS          | 12/10/85       | .F.              | / /              |                  | 12/12/85                 | DOCUMENT    |
| IN-85-411-001               | SAFTY HAZ ON PLATFRM | NSRS          | 07/23/85       | .T.              | 08/09/85         | T                | 09/08/85                 |             |
| IN-85-514-001               | CONTAM DURING CUTTIN | ERT           | 08/22/85       | .T.              | / /              |                  | / /                      | INSTRUMENT  |
| IN-85-541-001               | REQ WELD ON 2 SIDES  | NSRS          | 08/15/85       | .F.              | / /              |                  | 08/15/85                 | WELDING     |
| IN-85-556-001               | SUBJ DOING JOUR WORK | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-589-002               | SUBJ DOING JOURN WRK | ERT           | 09/28/85       | .T.              | / /              |                  | / /                      | WELDING     |
| IN-85-748-001               | TIE-IN OF SEAL DRAIN | ERT           | 08/16/85       | .F.              | / /              |                  | 08/16/85                 | DESIGN      |
| NS-85-002-001               | BFN/SUPTS ON RHR SYS | ERT           | 10/12/85       | .T.              | / /              |                  | / /                      | OPERATIONS  |
| XX-85-001-001               | SQN/D-G BATTERIES    | NSRS          | 11/18/85       | .T.              | / /              |                  | / /                      | QA          |
| XX-85-007-002               | SQN/LEAK DUE TO MGMT | NSRS          | 12/13/85       | .F.              | / /              |                  | 12/13/85                 | OPERATIONS  |
| XX-85-013-001               | SQN/WRONG WELD ROD   | ERT           | 08/22/85       | .F.              | / /              |                  | 08/27/85                 | WELDING     |
| XX-85-019-001               | BLN/AUDIT FINDINGS   | ERT           | 07/10/85       | .F.              | / /              |                  | 07/10/85                 | QA          |

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT  
EMPLOYEE CONCERN PROGRAM  
NUCLEAR REGULATORY COMMISSION LISTING

| OBJECT                      | INVEST<br>ORG | DATE<br>REPORT      | S<br>U<br>B<br>? | DATE<br>RESPONSE | A<br>C<br>C<br>? | DATE<br>INVEST<br>CLOSED | KEY<br>WORD         | #            |
|-----------------------------|---------------|---------------------|------------------|------------------|------------------|--------------------------|---------------------|--------------|
| MAN MATERIAL NSRS           |               | 12/09/85            | .F.              | / /              |                  | 12/10/85                 | MATERIAL            | 1            |
| ATION MONITO NSRS           |               | 11/26/85            | .T.              | / /              |                  | / /                      | OPERATIONS          | 1            |
| DESIGN DOO NSRS             |               | 11/26/85            | .T.              | / /              |                  | / /                      | DESIGN              | 1            |
| T SIGN-OFFS NSRS            |               | 11/26/85            | .F.              | / /              |                  | 11/29/85                 | QA                  | 1            |
| PER INSPECT NSRS            |               | 12/09/85            | .F.              | / /              |                  | 12/10/85                 | WELDING             | 1            |
| C SPOOL PIE NSRS            |               | 12/09/85            | .F.              | / /              |                  | 12/10/85                 | QA                  | 1            |
| <del>STATE DRAWI NSRS</del> |               | <del>12/13/85</del> | <del>.F.</del>   | <del>/ /</del>   |                  | <del>12/13/85</del>      | <del>DOCUMENT</del> | <del>1</del> |
| INSPECTIONS NSRS            |               | 12/12/85            | .F.              | / /              |                  | 12/13/85                 | WELDING             | 1            |
| N DEFICIENC NSRS            |               | 11/29/85            | .T.              | / /              |                  | / /                      | DESIGN              | 1            |
| TRAIN ENGI NSRS             |               | 12/09/85            | .F.              | / /              |                  | / /                      | OPERATIONS          | 1            |
| TRAIN ENGI NSRS             |               | 11/29/85            | .F.              | / /              |                  | / /                      | OPERATIONS          | 1            |
| 5-096-005 NSRS              |               | 11/26/85            | .T.              | / /              |                  | 11/29/85                 | OPERATIONS          | 1            |
| OR TUBE PRO NSRS            |               | 11/26/85            | .T.              | / /              |                  | 11/29/85                 | OPERATIONS          | 1            |
| ION AREAS NSRS              |               | 12/09/85            | .F.              | / /              |                  | 12/10/85                 | OPERATIONS          | 1            |
| TY AT PLAN NSRS             |               | 12/09/85            | .F.              | / /              |                  | 12/10/85                 | OPERATIONS          | 1            |
| S ID BY MA NSRS             |               | 12/11/85            | .F.              | / /              |                  | 12/11/85                 | OPERATIONS          | 1            |

36

306

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 : DEC 12 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-523-WBN

Subject QUANTITY VERSUS QUALITY IN INSTRUMENTATION

Concern No. IN-85-858-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by January 9, 1986. Should you have any questions *3TH*

please contact D. K. Baker at telephone 3752-WBN.

Recommend Reportability Determination: Yes X No     

DKB:GDM  
Attachment

cc (Attachment):

R. P. Denise, LP6N35A-C  
D. R. Nichols, E10A14 C-K  
QTC/ERT, Watts Bar Nuclear Plant  
H. S. Sanger, E11B33 C-K  
E. K. Sliger, LP6N48A-C  
W. F. Willis, E12B16 C-K (4)

*WLB*  
*[Signature]*  
Director, NSRS/Designee

DEC 17 '85

---Copy and Return---

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: December 18, 1985

I hereby acknowledge receipt of NSRS Report No. I-85-523-WBN  
Subject QUANTITY VS QUALITY/INSTRUMENTATION for action/disposition.



*WLB* 12/18/85

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. 1-85-523-WBN

EMPLOYEE CONCERN IN-85-858-001

MILESTONE 1

SUBJECT: QUANTITY VERSUS QUALITY IN INSTRUMENTATION

DATES OF INVESTIGATION: October 18-November 4, 1985

LEAD INVESTIGATOR:

*D. K. Baker*  
D. K. Baker

*12-6-85*  
Date

INVESTIGATOR:

*F. J. Mann*  
F. J. Mann

*12-9-85*  
Date

REVIEWED BY:

*P. R. Washer*  
P. R. Washer

*12-9-85*  
Date

APPROVED BY:

*for M. A. Harrison*  
M. A. Harrison

*12-9-85*  
Date

## I. BACKGROUND

NSRS has investigated Employee Concern IN-85-856-001 which Quality Technology Company identified during the Watts Bar Employee Concern Program. The concern is worded:

Instrumentation seems more concerned with quantity rather than quality workmanship. Example: Instrumentation line in south valve room had interference with 36" pipe. CI brought this to the attention of supervisor and was told not to be concerned. Per CI, supervisory staff wanted to buy-off the supports and could re-route the line afterwards. Location: Unit 2, time: March 1985. CI also stated this type of poor workmanship occurs constantly.

## II. SCOPE

The issues of the investigation were determined from the stated concern to be:

- A. Instrument line had interference with process piping.
- B. Supervisor wanted to buy off supports and reroute line later.
- C. This type of poor workmanship occurs constantly.

Based on the description given in the concern, NSRS reviewed the program and procedures related to instrument-line routing and inspection. This history of instrument-line routing was examined to determine if poor workmanship would be rejected by inspection procedures. The procedures were examined to determine if they allowed activities described in the concern to occur. The rejection rate of inspections was examined to determine their frequency. Visual inspections were made in the south Valve room of Units 1 and 2 to determine if such workmanship was apparent. Interviews were performed with QC inspection personnel to determine their understanding of the inspection process.

## III. SUMMARY OF FINDINGS

The investigation of this concern included the following: determination of what constitutes interference; review of procedures; review of procedure and criteria changes; frequency of inspection rejection notices (IRN); and, quantity versus quality.

- A. Instrument-line interference to process piping was determined to be either physical interference which would make it physically impossible to actually install instrument lines or interference with the process pipe's clearance envelope which could result in inadequate insulation clearance, violate train separation, or separation from high-energy pipe breaches. All of these were considered in the investigation.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### A. Conclusions

The concern of quantity versus quality was substantiated to the degree that it showed that the mechanism exists for accepting instrument-line hanger supports knowing that the instrument line would have to be rerouted and the supports possibly reworked. In addition, the current system of separate tests (No. 59) for each support rewards poor quality work by giving production credit for installing a support that would have to be reworked and subsequent additional credit given for the reworking of the support. Final acceptance of the subassembly is dependent on the successful completion of test No. 52. This portion of the concern would not be a safety issue since the line routing and the supports must be correct prior to final acceptance. This is an issue of efficiency and good work practices.

The line for a pressure transmitter (PT 2-2A) on steam generator loop 1 was run 2.5 inches from the steam line. Although it does not meet the intent of note 6a on Drawing 47W600-0-4 R16, "... and where practical by a minimum of 10 inches . . .", where practical is so vague that no criteria was violated. Drawing notes 6A, B, C, D, F, G, and H adequately cover train and protection-set separation. A review of the drawing notes and procedures showed that the other criteria adequately cover safety considerations. Running of instrument lines to common trains and protection sets should meet the 10-inch-minimum distance criteria except when physically impossible or truly impractical. Although no safety considerations are violated, notching of insulation to provide clearance is not good engineering practice.

Based on the frequency rate of IRN generation of less than 10 percent, there was no indication that this type of work occurs frequently.

##### B. Recommendations

###### I-85-523-WBN-01 - Support Credit when Subassembly Approved

WBN should investigate methods of tying QCP-3.11-1 and QCP-3.11-2 closer together to eliminate the mechanism which allows supports to be bought off prior to inspection of line routing. An alternative to this would be not allowing credit for each support (individual tests No. 59 of QCP-3.11-1) until test No. 52 of QCP-3.11-2 for the entire subassembly is approved.

###### I-85-523-WBN-02 - Specific Criteria for Separation

WBN should investigate methods to allow deviation to the 10-inch minimum separation to process lines given in Routing and Separation Instruction Note 6a on Drawing 47W600-0-4. This should be performed with specific criteria and not subjective wording as is currently being used.

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 : DEC 16 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

WLB—

Transmitted herein is NSRS Report No. I-85-727-WBN DEC 16 1985Subject ACCOUNTABILITY OF M&TE USEConcern No. IN-86-112-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by January 16, 1986. Should you have any questions,

please contact T. O. Frizzell at telephone 3651-WBNRecommend Reportability Determination: Yes X No     

DEC 16 1985

  
 Director, NSRS/Designee

TOF:GDM

Attachment

cc (Attachment):

R. P. Denise, LP6N35A-C  
 D. R. Nichols, E10A14 C-K  
 QTC/ERT, Watts Bar Nuclear Plant  
 H. S. Sanger, E11B33 C-K  
 E. K. Sliger, LP6N48A-C  
 W. F. Willis, E12B16 C-K (4)

✓ JTH file

--Copy and Return--

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: December 18, 1985

I hereby acknowledge receipt of NSRS Report No. I-85-727-WBN  
 Subject ACCOUNTABILITY OF M&TE USE for action/disposition.

  
 Signature

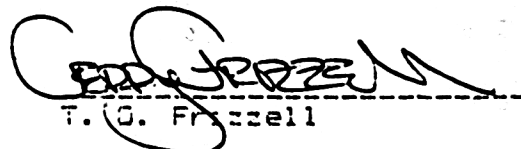
12/18/85  
 Date


TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
NSRS INVESTIGATION REPORT NO. I-85-727-WBN  
EMPLOYEE CONCERN IN-86-112-001  
MILESTONE 1

SUBJECT: ACCOUNTABILITY OF M&TE USE

DATES OF INVESTIGATION: November 19-December 6, 1985

INVESTIGATOR:

  
T. G. Frazell

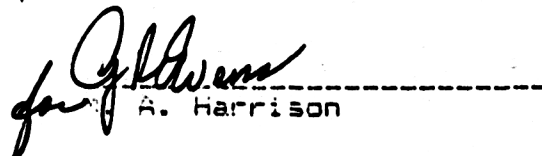
12.12.85  
Date

REVIEWED BY:

  
W. D. Stevens

12.12.85  
Date

APPROVED BY:

  
A. Harrison

12/12/85  
Date

## I. BACKGROUND

NSRS has investigated Employee Concern IN-S6-112-001 which was communicated to the Quality Technology Company (QTC) in response to the Watts Bar Employee Concern Program. The specific concern reviewed and discussed in this report was expressed by QTC to NSRS as follows.

The use of calibrated instruments and tools is not properly documented. The personnel responsible for this activity receive inadequate procedural training.

Further information was requested from QTC regarding the specific nature of the measuring and test equipment (M&TE) documentation problem discussed in the submitted NUC PR concern. In an effort to focus the direction of the investigation, inquiries were made as to whether a particular WBN plant section was identified, the types of M&TE involved, and the timeframe of concern occurrences. QTC related that the concerned individual (CI) identified documentation of NUC PR M&TE issuance as the area needing investigation and that known problems existed as late as September 1985. Also, to support the determination of the plant section where activities of concern were occurring, QTC provided the name of the CI's immediate supervisor. From this information, and based on an example of the M&TE issuance documentation problem which the CI had discussed with QTC, it was assessed that the concern investigation should be directed at the M&TE issued by the WBN Support Services Materials Unit.

## II. SCOPE

- A. The scope of this NSRS investigation was defined by the concern of record which entails verification of compliance with established NUC PR requirements for the documentation of M&TE issuance and determining the adequacy of program training provided to M&TE issue and user personnel.
- B. As a basis for investigation conclusions, reviews were made of the most recent NRC and Quality Assurance audit or survey reports which address the topic of control of M&TE to determine if the elements of concern had been previously identified. NUC PR corporate-level M&TE program criteria were compared against WBN procedures and instructions to assure compatibility with the requirements for training of program-implementing personnel and documentation of M&TE issuance. Records reviews and interviews with cognizant WBN Materials Unit, Training Section, and Instrument Maintenance Section employees were conducted to assess the adequacy of program training provided to M&TE issue and user personnel. Also, an examination was made of the program processes for the actual issuance of onsite NUC PR M&TE.

### III. SUMMARY OF FINDINGS

#### A. Requirements and Commitments

1. Topical Report TVA-TR75-1A, "Quality Assurance Program Description for Design, Construction, and Operation," Revision 8. Sections 17.2.2.3 and 17.2.12
2. ANSI N18.7-1976, "Administrative Control and Quality Assurance for the Operational Phase of Nuclear Power Plants," Paragraphs 3.3 and 5.2.16
3. NQAM, Part III, Section 3.1, "Control of Measuring and Test Equipment," Revision dated 8/21/84, Paragraphs 2.3.2, 2.3.3, 3.7, and 3.8
4. NQAM, Part III, Section 4.1, "Quality Assurance Records," Revision dated 5/15/85
5. NQAM, Part III, Section 6.1, "Selection and Training of Personnel for Nuclear Power Plants," Revision dated 10/12/84
6. WBN Administrative Instruction AI-5.9, "Control of Measuring and Test Equipment," Revision 26 dated 9/13/85
7. WBN Administrative Instruction AI-10.1, "Plant Training Program," Revision 14 dated 9/6/85

#### B. Findings

1. The results of the most recent audit conducted by the NUC PR Division of Quality Assurance (DQA) on the WBN control of M&TE program was presented in report GWB-A-85-0014 which was issued 6/27/85. During the audit performance the audit team identified and reported that there was no consistency between plant sections on the various section-level control programs for M&TE and therefore recommended that WBN develop and implement a plant-level program. It was stated that a central point of control along with a consistent program for all plant sections would enhance the WBN M&TE control activities. It was also identified that an item of M&TE was checked out of the tool room and logged as being used on one activity but actually was being used on multiple activities, thereby circumventing the log system for traceability of M&TE utilization. In addition to these adverse conditions, the audit team documented two quality program deviations dealing with inadequacies in the M&TE controlling procedure and the failure of some plant sections to fully implement the established requirements for the control of M&TE. In responding to this audit report (memorandum from E. R. Ennis to G. W. Killian dated 7/29/85), WBN plant management committed that by 9/15/85 a new plant-level instruction covering the M&TE program would be developed and implemented to resolve the identified deviations. With regard to the accountability of M&TE utilization, the response stated that the new plant instruction (AI-5.9, "Control of Measuring and Test Equipment") would require each user of M&TE to be responsible for listing all CSSC usages on an issue log sheet and that employees would be instructed on the proper implementation of AI-5.9.

2. The team leader for DQA Audit QWB-A-85-0014 was contacted on 11/25/85 to determine the implementation status of the corrective actions committed to resolve the reported inadequacies with the WBN M&TE program. It was related that Instruction AI-5.9, issued on 9/13/85, had been reviewed and found acceptable in defining a plant-level M&TE control program which meets the intent of the established quality standards and requirements. Also, it was indicated that implementation of the new M&TE control program, including training of issue and user personnel, had not been reviewed for adequacy. However, the DQA representative clearly stated that acceptable resolution of the identified deviations would be based in part on the verification that adequate and documented training on AI-5.9 has been provided to all appropriate M&TE issue/user personnel.
3. On 7/15/85 the Plant Quality Assurance (PQA) Staff issued Report WBN-AS-85-51 which documented the results of a survey conducted to ensure traceability/accountability of M&TE used to perform maintenance on CSSC equipment. This report documented numerous observations to support the report's concluding adverse condition that plant instructions in effect at the time did not preclude the utilization of M&TE on work not specified in the accountability log. The PQA report indicated that due to this adverse condition, M&TE utilization traceability was lost and the tool room M&TE accountability log was rendered an incomplete quality assurance record. As a result of the survey findings, PQA issued Corrective Action Report (CAR) WB-CAR-85-28 to the Site Services and Instrument Maintenance Sections for resolution of the program inadequacies. As with the response to DQA Audit Report QWB-A-85-0014, the response to the CAR stated that the WBN M&TE program was being revised and placed under the procedural control of an administrative instruction (AI-5.9). It also stated that AI-5.9 would contain new language which specified that each person using M&TE was to list all CSSC applications and usages on the applicable M&TE checkout logs and that all CSSC tool room attendants would be properly trained in all aspects of the new instruction.
4. Cognizant PQA personnel were interviewed regarding the status of corrective actions for WB-CAR-85-28. In addition to their verbal confirmation, documentary evidence was provided which verified that PQA had examined the issued AI-5.9 M&TE program description and found it acceptable. The documentation also conveyed that as of 9/30/85 all CSSC tool room attendants were "informally" trained on the criteria of AI-5.9. However, PQA had not considered or pursued having all WBN M&TE user personnel trained to the new AI-5.9 M&TE program.

5. Nuclear Regulatory Commission (NRC) Report Numbers 50-390/85-53 and 50-391/85-43 were transmitted to TVA on 10/25/85 to formally present the results of an inspection conducted at WBN between 8/20/85 and 9/20/85. Included within the NRC inspection scope was a review of the WBN M&TE program implementation. The inspectors identified and reported that a consistent M&TE program did not exist among the various plant sections and that the lack of consistency presented problems in records retrievals and verification of proper program implementation. It was also reported that accountability of the M&TE utilization, which is necessary for evaluating the effect of an as-found out-of-tolerance condition affecting previously completed work, did not appear to be adequately controlled. The inspectors noted, however, that on 9/13/85 a new administrative instruction (AI-5.9) was issued as the plant-level controlling document for M&TE. This AI was reviewed by the inspector and found to contain three significant changes to the previously delineated M&TE program. These noted changes were as follow.

- a. The records for all M&TE at WBN will be maintained in one central file.
- b. All CSSC applications and usages of each piece of M&TE will be listed in that equipment's file.
- c. The responsibilities to establish and supervise the M&TE program have been consolidated from five onsite organizations into three (Division of Power System Operations, NUC PR WBN Support Services, and NUC PR WBN Instrument Maintenance).

In concluding the discussion on the WBN M&TE program, NRC indicated that the effectiveness of the AI-5.9 program implementation would be reviewed in the future as an inspector followup item.

6. WBN AI-5.9 was independently reviewed by NSRS and compared against the M&TE program criteria referenced in Section III.A of this report. As with DQA, it was assessed that the program description was adequate in defining a plant-level M&TE control program. It was also noted, however, that certain program changes were described in AI-5.9 which emphasized the need for additional training or retraining of M&TE issue/user personnel. Specifically, the newly defined WBN program provides criteria for handling radioactivity-contaminated M&TE, crimping tools, and go/no-go gauges. Also, AI-5.9 establishes several program requirements, the implementation of which is highly dependent upon the procedural knowledge of the individual M&TE user. Examples of these current M&TE program responsibilities assigned to the user include the following.

- a. Verification that the utilized M&TE calibration date is current.
- b. Documenting all CSSC applications and usages of the M&TE.

- c. Reporting to defined personnel any M&TE that is suspected of not meeting any requirement set forth in AI-5.9.
  - d. Methods for handling out-of-calibration, damaged, or lost M&TE.
7. An interview was held on 11/22/85 with the cognizant unit supervisor of the WBN Engineering and Technical Training Section (E&TTS). It was related that the plant training organization had no knowledge of the WBN response to the DQA Audit Report QWB-A-85-0014 which committed to instructing plant employees in the proper implementation of AI-5.9. It was also related that no records of this training have been received from the other plant sections for maintenance by E&TTS.
  8. Discussions were held with appropriate management and instructor personnel of the WBN Instrument Maintenance Section to determine if AI-5.9 training had been provided to M&TE user personnel as committed. As indicated by the WBN training organization, the instrument maintenance contacts stated that they were unaware of the AI-5.9 training commitment and, therefore, the training had not been accomplished. However, the actual need for the training was readily acknowledged, and it was stated that efforts would be expended to schedule and conduct the training in the near future.
  9. The overall scope and implementation of the WBN M&TE issuance program was reviewed with the supervisor of the WBN Support Services Materials Unit. It was verified that actual issuance of WBN NUC FR M&TE is performed by Materials' Unit personnel, including the M&TE issued from the WBN Instrument Maintenance Section's tool room. This arrangement basically places the issuance control of all the onsite NUC FR M&TE under the responsibility of the Materials Unit. Upon questioning, the unit supervisor indicated that M&TE issue personnel had been "informally" instructed in the new AI-5.9 procedure by on-the-job training and that no formal training documentation had been generated. He also indicated that, to his knowledge, M&TE user personnel had not been trained on AI-5.9 but agreed with the need to do so.
  10. WBN Administrative Instruction AI-10.1, "Plant Training Program," was referenced to determine if documentation requirements existed for the "informal" AI-5.9 training which was provided to the M&TE issue personnel. It was noted that "informal training" is addressed in AI-10.1 as a specific form of instruction with established documentation criteria. Informal training is defined as that which is initiated within the various plant sections due to procedure/instruction revisions or in response to inspections, audits, or surveys by NRC, NSRS, OGAB, or the Plant QA Staff. AI-10.1 indicates that the defined documentation for informal training will be filed in the initiating section's files, because these documents are not considered QA records. NSRS considers the initiation, conduct, and documentation of training within the various plant sections

to be an acceptable method for maintaining the knowledge and proficiency of section employees. However, the AI-10.1 position that training documentation is not quality assurance records does not appear appropriate. This is particularly true when the training is conducted as a method of corrective action for identified program deficiencies.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

- A. Each of the latest reviews conducted by NRC, the Division of Quality Assurance, and Plant Quality Assurance Staff on the WBN M&TE control program has identified and reported that problems exist with the accountability of M&TE utilization. Based on this, the submitted concern regarding the use of M&TE not being properly documented was substantiated. However, subsequent to the concern submittal and in response to the noted regulatory and quality M&TE program reviews, several significant WBN M&TE control program changes have occurred to resolve the accountability of M&TE use problem. Specifically, the M&TE control program description has been elevated to a plant-level administrative instruction which is applicable to all onsite organizations. Also, control of all NUC PR M&TE issuance at WBN has been administratively placed under the cognizance of the Support Services Materials Unit to assure consistent implementation of the issuance documentation requirements. Additionally, the newly developed administrative instruction clearly establishes responsibilities for each person using M&TE to list all CSSC applications and usages of the M&TE on the appropriate checkout sheet.
- B. The additional submitted concern that M&TE issue/user personnel have not received adequate training on the documentation requirements related to M&TE utilization was also substantiated. Investigation results identified that even though WBN management committed to the Division of Quality Assurance to instruct employees on the proper implementation of the new M&TE administrative instruction (AI-5.9), only the Materials Unit issue personnel were trained, and that training was conducted informally. The AI-5.9 places responsibility for documenting M&TE utilization with the individual being issued the equipment. However, it appears that none of the WBN NUC PR M&TE user personnel were trained on the AI-5.9 assigned responsibilities or other newly established M&TE control program aspects.

##### Recommendations

##### I-85-727-WBN-01 - Training for AI-5.9 Implementing Personnel

A formal training program which fully addresses all elements of the newly developed WBN control program for NUC PR M&TE should be provided to all appropriate onsite personnel. This training should emphasize the individual M&TE user's responsibilities for implementation of the control program, and adequate documentation demonstrating completion of the training should be maintained. Also, consideration should be given to having the WBN Training Section develop and present the training material to assure that consistent instruction is provided to all affected plant sections. Additionally, this program of instruction should be presented to M&TE issue personnel as well.

I-65-727-WBN-02 - Training Documentation Criteria of AI-10.1

WBN Administrative Instruction AI-10.1 should be reviewed and revised to stipulate that records of training provided in response to NRC inspections, QA audits, or QA/QC surveys should be processed and maintained as quality assurance records. The basis for this recommendation is that both the NQAM, Part III, Section 4.1, and WBN Administrative Instruction AI-4.1 identify records of personnel training as typical operational-phase quality assurance records which must be maintained for six years past employee work termination or transfer. Both procedures also define QA records as those which furnish documentary evidence of the quality of items or activities which affect the quality of the CSSC. Besides training of plant personnel, another activity which can affect CSSC quality is implementation and completion of corrective actions for identified adverse conditions. As such, those records which demonstrate the adequacy of measures taken to correct deficiencies identified by inspections, audits, or surveys should be maintained as quality assurance documents.

UNITED STATES GOVERNMENT

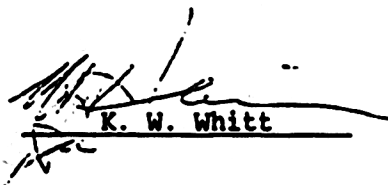
# Memorandum

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 : DEC 16 1985  
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.

I-85-361-WBN (IN-85-877-001)  
I-85-693-WBN (IN-86-305-002)

  
K. W. Whitt

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

NAME

DATE

GDM

Attachments

cc (Attachments):

R. P. Denise, LP6N35A-C  
E. R. Ennis, WBN  
D. R. Nichols, E10A14C-K  
Eric Sliger, LP6N48A-C  
W. F. Willis, E12B16 C-K (4)



TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
NSRS INVESTIGATION REPORT NO. I-85-361-WBN  
EMPLOYEE CONCERN IN-85-877-001  
MILESTONE 6

SUBJECT: EROW SYSTEM DETERIORATION

DATES OF INVESTIGATION: December 2-11, 1985

INVESTIGATOR:

Fredrick J. Slagle  
F. J. Slagle

12/12/85  
Date

REVIEWED BY:

J. G. Smith  
J. G. Smith

12/12/85  
Date

APPROVED BY:

M. A. Harrison  
M. A. Harrison

12/12/85  
Date

## I. BACKGROUND

The Nuclear Safety Review Staff (NSRS) investigated Employee Concern IN-85-277-001 which Quality Technology Company (QTC) had identified during the Watts Bar Employee Concern Program. The concern was worded as follows:

The EROW line was accepted by Knoxville Engineering even though Watts Bar QA found and documented the following non-conformances: (1961/1962)

1. Did not meet min thickness (liner).
2. Liner did not bond to pipe.
3. Grout was not maintained at 100% humidity (ends of pipe were improperly covered during curing).
4. Liner has cracks.
5. Screens going into R81 and 2 are currently being clogged with chipped grout.

No additional information available.

Prior to the initiation of this investigation, an attempt was made through QTC to obtain additional information about the clogging of screens in the EROW identified in No. 5 in the above concern. The concerned individual stated that this information was hearsay, and no firsthand knowledge of any system clogging was available.

## II. SCOPE

See NSRS Investigation Report No. I-85-166-WBN.

## III. SUMMARY OF FINDINGS

See NSRS Investigation Report No. I-85-166-WBN.

## IV. CONCLUSIONS AND RECOMMENDATIONS

Refer to NSRS Investigation Report No. I-85-166-WBN. No additional response is necessary. This item is closed; corrective action is tracked by I-85-166-WBN.

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

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

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

DATE : DEC 16 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL


Transmitted herein is NSRS Report No. I-85-372-SQN

Subject LEAK DUE TO MANAGEMENT

Concern No. XX-85-007-002

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

Recommend Reportability Determination: Yes        No X

  
\_\_\_\_\_  
Director, NSRS/Designee

RCS:JTH

Attachment

cc (Attachment):

R. P. Denise, LP6N35A-C  
R. J. Griffin, SQN E-18  
G. B. Kirk, SQN  
D. R. Nichols, E10A14 C-K  
QTC/ERT, Watts Bar Nuclear Plant  
Eric Sliger, LP6N48A-C  
J. H. Sullivan, SQN  
W. F. Willis, E12B16 C-K (4)



TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

INVESTIGATION REPORT NO. I-85-372-SQN

EMPLOYEE CONCERN: XX-85-007-002

SUBJECT: LEAK DUE TO MANAGEMENT


DATES OF  
INVESTIGATION: SEPTEMBER 19-23, 1985

LEAD  
INVESTIGATOR:

  
E. F. HARWELL

12/6/85  
DATE

INVESTIGATOR:

  
KIRBY LAWLESS

12/11/85  
DATE

REVIEWED BY:

  
R. C. SAUER

12/13/85  
DATE

APPROVED BY:

  
M. A. HARRISON

12/15/85  
DATE

## **I. BACKGROUND**

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern as received by Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-007-002, stated:

"Leak in April 1983 in Unit 2 reactor was due to management's (name unknown) desire to break time records (179 days on line). Result was contamination of 500-600 gallons."

Further information was requested from the ERT followup group regarding where the leak had occurred. QTC relayed that the CI identified the leak as a steam generator leak.

## **II. SCOPE**

- A. The scope of the investigation is defined by the concern of record which entails investigating the following issues:
  - 1. Leak in unit 2 reactor resulted in contamination leakage of 500-600 gallons per day.
  - 2. Leak was caused by management's desire to break record time on line.
- B. The Monthly Operation Reports to NRC and Shift Engineer, Unit Operator, and Assistant Shift Engineer daily logs were reviewed for the months of April through July 1983. In addition, reviewed the plant daily operational event report and surveillance instruction leakage data records for the months of May, June, and July 1983. Interviews were also conducted with a plant compliance engineer and plant manager who were familiar with plant operations during this time period.

## **III. SUMMARY OF FINDINGS**

### **A. Requirements and Commitments**

- 1. Sequoyah Unit 2 Technical Specifications, paragraph 3.4.6.2.C - Limits primary to secondary leakage to 500 gallons per day through any one steam generator. If this leakage rate is exceeded, the unit must be shut down and be in cold shutdown condition within 36 hours.

### **B. Findings**

- 1. The records reviewed in this investigation revealed that in early May 1983 (not April as stated), the unit 2 No. 3 steam generator experienced a through wall tube leak. This resulted in leakage of reactor coolant into the secondary side of the steam generator. The unit continued to operate until the

reactor tripped as the result of the loss of a feed pump on July 18, 1983. The leakage at that time was approximately 311 gallons per day (ref. 6).

2. The plant operational event report issued the day following detection of the tube leak (ref. 2) stated "current plans are to continue normal operation until scheduled refueling outage." Since the technical specification primary to secondary tube leakage limit of 500 gallons per day was never exceeded, continued operation did not present a safety concern. Economic considerations dictated that the unit continue to operate until the scheduled August 5, 1983, refueling outage if possible.
3. The leakage rate was monitored frequently during this time and did not exceed the NRC approved technical specification limit. The leakage was calculated to be 553 gallons per day on July 19, 1983, after the unit had tripped (ref. 6); however, this was later determined to be an erroneous calculation because the unit was in a transient condition. For calculations of this nature to provide accurate results, the data must be taken when the unit is operating in a stable condition for several days, which was not the case after the trip. However, Potential Reportable Occurrence (PRO) Report No. 2-83-71 (ref. 7) was initiated. During discussions between plant management, Westinghouse, and NRC, they agreed that the leakage calculation was not valid and that the more accurate determination of leakage was that made just prior to the trip. Therefore, technical specification limits had not been exceeded and it was determined that the event did not require a formal report to the NRC.
4. During subsequent inspections of the steam generator to determine the location and cause of the leakage, it was determined that the leakage resulted from a piece of loose metal rubbing against the tubes and subsequently wearing a hole through the tube wall. This metal piece had inadvertently been left in the steam generator after a modification had been made on the secondary side. This prompted a thorough examination of all generators and retrieval of any loose or foreign material.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

The employee concern appears to be unsubstantiated for the following reasons:

- The leak was not caused by management actions or lack of, but by movement of a loose metal piece rubbing against the tubes.
- The leakage never exceeded 500 gallons per day.

- No objective evidence was found during the investigation that indicated that a record run time was the main consideration for continued operation.

**Recommendations**

**None**

## Unit 2 SG #3 Tube Leak Chronology

- 5/9/83 - Indication on condenser vacuum exhaust and steam generator (SG) blowdown radiation monitor indicate tube leak in U-2 #3 SG. (Operation explanation in ref. 7)
- Significant Operational Event portion of the Monthly Operation Report to NRC (ref. 1) reported primary to secondary tube leak in #3 SG.
- 5/10/83 - ASE/SRO Journal - U-2 SG #3 leakage approximately 15 gallons per day (gpd) (approximation).
- 7/16/83 - SRO Daily Journal entry shows U-2 #3 SG leak rate at 234 gpd.
- 7/17/83 - Unit 2 operating at 98% thermal power. Shift Engineer log shows chemical lab analysis indicates #3 SG tube leak approximately 234 gpd.
- 7/18/83 - Per Larry Nobles July 28, 1983 note to Compliance Section, chemical lab analysis of SG tube leak yields approximately 311 gpd.
- Reactor tripped at 1233 hours on feed pump turbine trip and SG low water level - leak terminated.
- 7/19/83 - 0215 hours chemical lab analysis yields approximately 553 gpd tube leakage (ref. 6). NRC notified on red phone. Plant Superintendent (C. C. Mason) notified.
- Significant Operational Event section of Monthly Operation Report to NRC reports 553 gpd leakage.
- 7/28/83 - Larry Nobles consulted by Westinghouse and NRC - determined that chemical lab analysis (553 gpd) was not accurate because it was performed while unit was in an unstable condition. Last analysis during stable unit condition was on 7/18 and yielded 311 gpd. Determined that event was not reportable as technical specifications had not been violated.
- 8/2/83 - PRO documented determination that event was not reportable.

**DOCUMENTS REVIEWED IN INVESTIGATION I-85-372-SQM  
AND REFERENCES**

1. Sequoyah Monthly Operation Report to NRC, April-September 1983
2. Plant New and Escalated Operation Event Report for May, June, and July 1983
3. Sequoyah Unit 2 Tech Spec Section 3/4.4.6 Reactor Coolant System Leakage
4. FSAR Section 5.2 Integrity of Reactor Coolant System Boundary
  - 15.4.3 Steam Generator Tube Rupture
  - 15.5.5 Environmental Consequences of a Postulated Steam Generator Tube Rupture
5. Shift Engineer, Unit Operator, and Assistant Shift Engineer daily log - April-September 1983
6. Surveillance Instruction SI-137.2 Reactor Coolant System Water Inventory Data Packages for May, June, and July 1983
7. Potential Reportable Occurrence Report PRO 2-83-71 originated on July 19, 1983
8. Larry Nobles July 28, 1983 note to Compliance Section.

UNITED STATES GOVERNMENT

# Memorandum

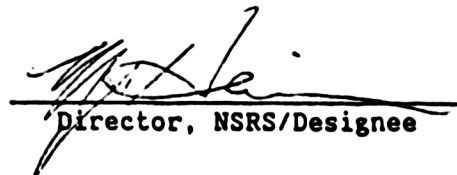
TENNESSEE VALLEY AUTHORITY

TO : H. L. Abercrombie, Site Director, Sequoyah Nuclear Plant  
FROM : K. W. Whitt, Director of Nuclear Safety Review Staff, E3A8 C-K  
DATE : **DEC 13 1985**  
SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-652-SQN  
Subject SEQUOYAH WELD INSPECTIONS NOT AS STRICT AS WATTS BAR  
Concern No. XX-85-083-001

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

Recommend Reportability Determination: Yes        No X

  
Director, NSRS/Designee

RCS:JTH  
Attachment  
cc (Attachment):  
R. P. Denise, LP6N35A-C  
R. J. Griffin, SQN E-10  
G. B. Kirk, SQN  
D. R. Nichols, E10A14 C-K  
QTC/ERT, Watts Bar Nuclear Plant  
Eric Sliger, LP6N48A-C  
J. H. Sullivan, SQN  
W. F. Willis, E12B16 C-K (4)

0179U



TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
INVESTIGATION REPORT NO. I-85-652-SQN  
EMPLOYEE CONCERN: XX-85-083-001

SUBJECT: SEQUOYAH WELD INSPECTIONS NOT AS STRICT AS WATTS BAR

DATES OF  
INVESTIGATION: October 1-17, 1985

INVESTIGATOR:

E. F. Harwell  
E. F. Harwell

12/6/85  
Date

REVIEWED BY:

R. C. Sauer  
R. C. Sauer

12/6/85  
Date

APPROVED BY:

M. A. Harrison  
M. A. Harrison

12/12/85  
Date

## **I. BACKGROUND**

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern as received by Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-083-001, stated:

"Sequoyah: Individual expressed that during previous employment at Sequoyah, welding inspection was not as strict as it is at WBNP. The concern is that either Sequoyah was not properly inspected, or that WBNP is excessively inspected, and unduly increases the cost of welding."

Further information was requested from the ERT followup group regarding whether the concern was related to particular type welds, type inspections, or location within the plant. QTC/ERT was unsuccessful in contacting the Concerned Individual (CI) to obtain any more specific information. Because the nature of the expressed concern could not be narrowed in scope, it was addressed in a broad generic manner.

## **II. SCOPE**

- A. The scope of the investigation is defined by the concern of record which entails determining two specific issues.
  - 1. Were Sequoyah welds properly inspected?
  - 2. Were Watts Bar welds excessively inspected resulting in unjustified welding cost?
- B. Construction Specifications, Design Criteria, FSAR, and construction installation procedures which govern the design, classification, and installation requirements for Sequoyah and Watts Bar were reviewed. A comparison was made between the two plants with regard to code requirements and installation commitments. Interviewed several people that had been associated with either welding requirements or actual inspections for both plants.

## **III. SUMMARY OF FINDINGS**

- A. Requirements and Commitments
  - 1. ANSI Standard B31.7 (1969) and 1970 Addendum Nuclear Power Piping - Governed installation and inspection requirements for Sequoyah Safety Class A, B, C, and D piping systems.
  - 2. ASME Section III, 1971 Edition through Summer 73 Addenda - Nuclear Power Plant Components - Governed Installation and Inspection Requirements for Watts Bar Safety Class A, B, C, and D Piping Systems.

3. ANSI Standard B31.1.0 (1967) - Power Piping - Governed installation and inspection requirements for Sequoyah Safety Class G and H piping systems.
4. ANSI Standard B31.1, 1973 Edition, Summer 1973 Addendum - Power Piping - Governed the installation and inspection requirements for Watts Bar Safety Class G and H piping systems.
5. 10CFR50 Appendix B - Basis for Quality Assurance (QA) program at Sequoyah.
6. ASME Section III, Subsection NA-4000 - Basis for NCM (Nuclear Components Manual) code manual QA requirements for Watts Bar.

#### B. Findings

1. Although different construction codes were in effect at each site, the installation requirements and level of inspections was essentially the same for both plants with the exception that portions of the Watts Bar plant are ASME Code stamped which requires verification by a third party inspector (Authorized Nuclear Inspector, ANI).
2. Although the inspection requirements are essentially the same for both plants, the QA requirements at each specific location required the inspections to be implemented and documented differently. For example, at Watts Bar the inspection of each safety-related pipe weld for "fitup" and "release for welding" requires verification by an inspector of certain parameters (i.e., cleanliness, weld prep, gap, purge, preheat, etc.), and the inspection for fitup is broken down into several Quality Control (QC) holdpoints which may require multiple inspections and completion of more than one weld inspection data card for a given weld. Conversely, at Sequoyah all these parameters were accomplished under one QC holdpoint and documented on one weld data card.
3. Up to 1984 many of the welds at Watts Bar have undergone additional or supplemental reinspections to address various safety concerns such as integrity of welded supports, fillet welds potentially undersized, and inspectability of painted welds.
4. Some structural supports at Watts Bar required QC fitup verification; whereas, similar supports at Sequoyah required fitup verification by the welder foremen and QC inspection of the finished weld.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

1. The employee concern is not substantiated for the following reasons:

- a. The allegation that Sequoyah welds may not have been properly inspected could not be substantiated because these welds were inspected under an inspection and QC program which met the QA and Code requirements applicable to construction activities at Sequoyah.
  - b. The allegation that Watts Bar welds were excessively inspected could not be substantiated because these welds were inspected under an inspection and QC program which met the ASME Code requirements applicable to Watts Bar. Since Watts Bar is an ASME Code stamped plant, the independent third party (ANI) verification of inspections performed by TVA personnel could be construed as a more strict inspection program. In addition, Watts Bar has been subjected to many reinspections to resolve possible safety concerns and to satisfy NRC inquiries. These, also, could be construed as a more strict inspection program.
2. A comparison of the overall welding inspection and documentation requirements between two nuclear plants of different ages, different codes of record, and code plant versus noncode plant cannot be described succinctly and if done differences will be observed. These differences would not necessarily indicate that one inspection program is better than the other or that the weld integrity of one plant is better than the other.

Recommendations

None

**DOCUMENTS REVIEWED IN INVESTIGATION I-85-652-SQN  
AND REFERENCES**

1. SNP Construction Procedure W-3, Revision 3, dated December 4, 1978, "Weld Procedure Assignment and Welding Surveillance"
2. SNP Construction Specification No. N2M-865, Revision 3, dated April 12, 1977, "Field Fabrication, Assembly Examination, and Tests For Pipe and Duct Systems"
3. SNP General Design Criteria No. SQN-DC-V-3.0, Revision 1, dated June 28, 1985, "The Classification of Piping, Pumps, Valves, and Vessels"
4. WBNP Quality Control Instruction QCI-4.03, Revision 6, dated August 25, 1984, "Process Control, Welding Surveillance, and Weld Procedure Assignment"
5. WBNP Construction Specification No. N3M-868, Revision 2, dated February 4, 1985, "Field Fabrication, Assembly, Examination, and Tests For Piping Systems"
6. WBNP General Design Criteria No. WB-DC-40-36, Revision 1, dated March 15, 1984, "The Classification of Piping, Pumps, Valves and Vessels"
7. TVA General Construction Specification G-29, sections P.S.3.C.5.2(R2) dated March 7, 1983 and P.S.3.C.5.4(R2) dated January 28, 1985, "Process Specifications for Welding, Heat Treat, Nondestructive Examination, and Allied Field Fabrication Operations"
8. SNP FSAR Section 3.2 - Classification of Systems, Structures, and Components

NOTE: Revision history of some documents were also reviewed.

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, WBN

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

DATE : September 3, 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-211-WBNSubject Excessive Paperwork Affects OperationsConcern No. IN-85-140-001 and IN-85-616-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by September 16, 1985. Should you have any questions,

please contact W. D. Stevens at telephone 6970-K; 222-WBNRecommend Reportability Determination: Yes        No X  
\_\_\_\_\_  
Director, NSRS/Designee

cc: W. F. Willis, E12B16 C-K (4)  
J. W. Coan, P-104 SB-K  
H. N. Culver, W12A19 C-K

Guenter Wadewitz, WBN  
QTC/ERT, CONST-WBN

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

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

From:

Date:

I hereby acknowledge receipt of NSRS Report No. \_\_\_\_\_

Subject \_\_\_\_\_

for action/disposition.

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

(Please copy entire page for return)



## I. BACKGROUND

The employee concerns as received from the ERT stated:

### Concern IN-85-616-001

"Excessive paperwork causes reactor operators to be unavailable for running the plant for two hours. Much of this paperwork could be delegated to other groups with the operators having oversight."

### Concern IN-85-140-001

"The amount of paperwork processed through the Control Room and Shift Engineer's office--especially surveillance inspections--focuses the attention of the licensed operators away from a vigilant watch of plant conditions into making sure everything is properly filled out on all the many pages of data."

## II. SCOPE

Documentation that related to both licensed and unlicensed control room operator duties was reviewed and unit operators and operations management were interviewed regarding required paperwork performed and its effect on "operator vigilance" during plant operations.

## III. SUMMARY OF FINDINGS

Based upon a review of applicable documents and interviews with Unit Operators and Operations Management, the specific findings listed below were identified:

- A. Routine paperwork as described by interviewees consisted of the following:
  - 1. Daily journal entries.
  - 2. System status file/configuration log updates.
  - 3. Review of daily, weekly, and other periodic surveillance instructions performed by lower grade operators.
  - 4. Review of Assistant Unit Operator routine log sheets.
  - 5. Actual performance and documentation of Unit Operator performed surveillance instruction procedures.

This paperwork appeared consistent with Unit Operator (Nuclear) duties as described in the job description for the position and as required by the following plant procedures:

- 1. AI-2.1, "Authorities and Responsibilities for Safe Operation and Shutdown," sections 3.5, 3.15, and 3.17.

2. Operating Section Letter - 2, "Maintaining Cognizance of Operational Status."
  3. Operating Section Letter - 41, "Operations Narrative Log Books."
  4. Surveillance Instruction - 2, "Shift and Daily Surveillance Log" (requirements for operator signoff reviews).
- B. Interviews with licensed and unlicensed unit operators resulted in the following information:
- o Estimates of the time required for performance of routine paperwork varied from 30 minutes to 8 hours and was dependent on the shift worked and the plant conditions.
  - o No meaningful amount of paperwork could be delegated to any group other than Operations. An extra (third) Unit Operator was needed only during sporadic heavy workload periods.
  - o The paperwork load which consisted of surveillance instruction performance for Emergency Core Cooling System (ECCS) equipment and valve stroke timing tests on safety-related equipment appeared to be the major items that diverted the unit operator's attention from the rest of the main control room boards. It was stated, however, that no one other than another qualified operator could perform this function on a control room panel.
- C. Interviews with Operation Management resulted in the following information:
- o A third Unit Operator would normally be used on the control room functions during unit startup conditions up to approximately 20 percent power.
  - o The Shift Engineer had the authority to call in and use operations personnel as necessary for shift manning requirements.
  - o Surveillance tests which were performed on unit equipment in the control room but outside the "horseshoe" area of the control boards involving long-term testing (e.g., Diesel Generator Load Testing) were normally performed by a third Unit Operator if the workload was heavy or test performance was scheduled on the day shift.
  - o Surveillance testing performed in the control room by the Unit Operator helped him in maintaining an awareness of unit conditions.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### A. Concern No. IN-85-616-001

###### Conclusion

Concern IN-85-616-001 was not substantiated due to the following considerations.

1. The interviews conducted indicated that although the paperwork load was at times heavy due to present work conditions (testing prior to fuel loading) and that to some degree this paperwork might detract from normal duties, it did not appear to be of the magnitude that the operators were "unavailable for running the plant for two hours."
2. The majority of paperwork causing the greatest concern to Unit Operators interviewed (e.g., performing and reviewing Surveillance Instructions) could not be performed by "other groups" due to the nature of the work performed and NRC licensing requirements.

###### Recommendation

None

##### B. Concern No. IN-85-140-001

I-85-211-WBN-01, "Additional Operator Manning Authority"

###### Conclusions

Concern IN-85-140-001 was partially substantiated due to the following considerations.

1. As indicated in conclusion A.1 (above), the surveillance paperwork load was felt to detract from "operational vigilance" to some extent by most operators interviewed. This surveillance workload, however, was a normal function of the position at all TVA nuclear plants and could be partially attributed to the varied workload requirements and preoperational testing performed in the unit control room prior to fuel loading. This would appear to be primarily a scheduling and shift management function. It was stated by Operations Management interviewed that the Shift Engineer had the authority to man the shift with operations personnel as necessary for the workload and to meet WBN Technical Specifications requirements (requirements beginning at fuel load). Documentation reviewed indicated that this was correct for NRC required licensed and support positions, however, documented authority allowing the Shift Engineer to man the unit with a third Unit Operator position as he deemed necessary for workload requirements was not found in the Operation Section Letters and other documentation reviewed relating to shift manning.

NSRS Recommendation

Document the authority of the Shift Engineer to provide additional operator support above the minimum staffing requirements as necessary to meet the changing workloads both prior to and after fuel loading.

UNITED STATES GOVERNMENT

## Memorandum

TENNESSEE VALLEY AUTHORITY

TO : E. R. Ennis, Acting Site Director, Watts Bar Nuclear Plant

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

DATE : OCT 16 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-427-WBN

Subject No PHYSI-2, Attachment D, For Conduit Breaches

Concern No. IN-86-102-001 and IN-86-103-001

and associated recommendations for your action/disposition.

It is requested that you respond to this report and the attached recommendations by October 29, 1985. Should you have any questions, please contact W. D. Stevens at telephone 126-143-3779.

Recommend Reportability Determination: Yes        No X WLB

*[Signature]*  
Director, NSRS/Designee

## Attachment

cc (Attachment):

H. N. Culver, W12A19 C-K  
QTC/ERT, Watts Bar Nuclear Plant  
W. F. Willis, E12B16 C-K (4)

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

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: October 31, 1985

I hereby acknowledge receipt of NSRS Report No. I-85-427-WBN  
Subject No PHYSI-2, Attachment D, For Conduit Breaches for  
action/disposition.

*[Signature]*  
Signature

10/24/85  
Date



TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
NSRS INVESTIGATION REPORT NO. I-85-427-WBN  
EMPLOYEE CONCERNS IN-86-102-001 AND IN-86-103-001  
MILESTONE 1

SUBJECT: NO PHYSI-2, ATTACHMENT D, FOR CONDUIT BREACHES

DATES OF INVESTIGATION: September 9-30, 1985

INVESTIGATOR: W. D. Stevens  
W. D. Stevens

10/11/85  
Date

REVIEWED BY: G. G. Brantley  
G. G. Brantley

10/11/85  
Date

APPROVED BY: M. A. Harrison  
M. A. Harrison

10/12/85  
Date

## I. BACKGROUND

The employee concerns as received from Quality Technology Company stated:

### Concern\_IN-86-102-001

The requirement for conduit insulation deleted and insulation removed from MC 847B. At the hanger attachment conduit A is on the same hanger. Requirements for hanger fireproofing for conduit A includes 12". This constitutes a breach in A. A Physi-2 Attachment D is required for each breach and Attachment D is not filled out. CI has no more info. Unit 1, 737' Elev. on Q, wall from A-14 to A-12 on Elev. 752'. Nuclear Power concern, time frame - current.

### Concern\_IN-86-103-001

No Attachment D from Physi-2 issued for breach to insulation on cable conduit. Conduit 847B on Q Wall, elevation 737 about 15' above the floor A10 to A8. Also 945B (same location) over cooling tank #2. CI has no additional information. Nuclear Power Concern. Unit 1. Ongoing.

## II. SCOPE

The scope of the investigation was determined from the stated concerns to be that: conduit fire wrap insulation was removed from conduit MC 847B which exposed a heat-transfer surface to conduit MC 846A located on the same hangers on Q wall, elevation 737, of the auxiliary building. This resulted in an unauthorized breach to MC 846A when insulation was removed from MC 847B after its fire wrap requirements were deleted. Conduit 945B in the same location was also breached without the proper authorization.

Documentation regarding 3-M fire wrap was reviewed, and the specific conduits referenced by the concern were examined for compliance with requirements.

## III. SUMMARY OF FINDINGS

- A. Further information was requested from Quality Technology Company (QTC) for the concerns expressed. Both concerns were found to be identical in nature regarding conduits MC 847B and MC 846B although the concern forms as received from QTC had different wording.
- B. Electrical conduits MC 847B and MC 846A located on elevation 737, Q wall from A9 to A14, were physically examined by NSRS including the hanger supports and 3-M fire wrap. Both conduits were approximately 6 inches apart and supported by common unistrut hangers. Conduit MC 846A was wrapped with 3-M fire wrap along its entire length. Insulation had been removed from part of MC 847B (from A14 to A12Q) with a maintenance request during July 1985 after fire wrap was no longer required for the entire conduit length. This removal resulted in requirements on conduit MC 846A being violated since conduits within the 12-inch heat-transfer path to a protected item are required to be wrapped.

- C. Conduit MC 945B located on elevation 737 was physically examined from Q wall, junction box 830 (between A8 and A9), to A10S. One unauthorized fire breach was discovered approximately 8 feet east of A8-S over the component cooling water heat exchanges. This consisted of the fire wrap and one conduit cover removed on the conduit. No Physi-2, Attachment D, was posted in the area for this breach as required by plant procedures.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### Conclusions

- A. Concern IN-86-102-001 was substantiated for the following reasons.
1. The fire wrap on conduit MC 846A was found to be breached in violation of 3-M fire wrap specifications requirements.
  2. No Physi-2, Attachment D, authorization was in effect as required by plant procedures.
  3. The fire breach was the result of the fire wrap removal from MC 847B which inadvertently exposed conduit MC 846A.

##### Recommendations

##### I-85-427-WBN-01 - Conduit MC 846A Fire Wrap Breach

Inspect and rewrap conduit MC 846A as required to comply with 3-M fire wrap specifications.

##### Conclusions

- B. Concern IN-86-103-001 was substantiated for the following reasons.
1. Conclusions and recommendations regarding conduit MC 846A/MC 847B fire wrap breach are similar to IV.A.1., 2., and 3.
  2. Conduit MC 945B was found to be breached in an unauthorized manner with no Physi-2, Attachment D, in effect at the time of inspection by NSRS.

##### Recommendations

##### I-85-427-WBN-02 - Conduit MC 945B Conduit Breach

Inspect and restore conduit MC 945B as required to comply with 3-M fire wrap specifications and plant procedures.

May 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50211

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # WI-85-100-002

I-85- -WB11

Category: 53

Confidentiality: \_YES \_NO (I&H)

Supervisor Notified: \_\_YES \_\_\_NO

NUCLEAR SAFETY RELATED YES

Concern: DIESEL GENERATOR MARGINS ARE INADEQUATE. TVA HAS ADDED DGS TO BROWNS FERRY, SEQUOYAH AND WATTS BAR. EACH TIME A QUESTION IS RAISED, TVA MUST CONDUCT ANOTHER STUDY. TVA ADDS DIESEL GENERATORS WITHOUT UPGRADING LICENSING DOCUMENTS. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

D-61 61 004-05

*William J. Schum* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ☒ -----

OTHERS (SPECIFY) -----

*electric  
D-61*

*Bruce L. Hughes* 12/13/85  
NSRS DATE

may 16

PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50212

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # WI-85-100-032

I-85 - WBN

Category: 73

Confidentiality: YES NO (I&H)

Supervisor Notified: YES NO

NUCLEAR SAFETY RELATED YES

Concern: CONSTRUCTION PROCESS DOES NOT ALWAYS FOLLOW ENDES REQUIREMENTS DOCUMENTS, OR VENDOR REQUIREMENTS/INSTRUCTIONS. THESE DEVIATIONS DO NOT ALWAYS GET INCLUDED ON AS-BUILT DOCUMENTS, AND THERE IS TOO MUCH "AFTER THE FACT" APPROVAL. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

CONSTRUCTION PROCESS

*William J. Schaefer* DEC 07 1995  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS ✓

OTHERS (SPECIFY) -----

Construct  
Control

*Bruce J. Griffin* 12/13/85  
NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50214

ERT has received the Employee concern identified below, and has assigned the indicated category and priority:

Priority: 1

Concern # XX-85-122-014

I-SS- - SAN

Category: 13

Confidentiality: \_YES \_NO (I&H)

Supervisor Notified: \_\_YES \_\_\_NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: ENVIRONMENTAL QUALIFICATIONS OF ELECTRICAL AND I&C EQUIPMENT AND COMPONENTS IS INADEQUATE. QUALIFICATION WAS OFTEN NOT DONE, OR IF DONE, RECORDS DO NOT EXIST IN MANY CASES, WHICH RESULTS IN MODIFICATION OR REPLACEMENT. CURRENT UPGRADE PROGRAM FOR ENVIRONMENTAL QUALIFICATIONS NEEDS SCRUTINY. CI HAS NO FURTHER INFORMATION. ANONYMOUS CONCERN VIA LETTER.

SAN/ENVR QUALIF

*William J. Schenck* DEC 07 1985  
MANAGER, ERT DATE

NSRS has assigned responsibility for investigation of the above concern to:

ERT ---

NSRS/ERT -----

NSRS --- *✓* --- RCS

OTHERS (SPECIFY) -----

*Equipment Qualification*

*Bruce F. Lough* 12/13/85  
NSRS DATE

8. Quality Control Instructions, Quality Control Procedures, and instrument-line installation drawing notes were reviewed to determine their adequacy as related to this investigation. All procedures adequately covered the process except for two identified problems.

The first was related to the inspection process. QCP-3.11-1 R6, "Inspection and Documentation of Instrumentation Supports," provides the media (test No. 59) for the inspection of supports and inspection of instrument lines between adjacent supports for line slope and cleanliness. Each support and its adjacent line are individually tested in accordance with test No. 59. QCP-3.11-2 R5, "Inspection and Documentation of Instrument Lines," provides the media (test No. 52) for inspection of the instrument-line subassembly. This test verifies correct instrument-line routing, correct material, and inspects bends. One test is performed for the entire subassembly. The separation of these inspections allows supports to be accepted knowing the instrument-line routing will not pass the test No. 52. Should this occur, production credit is given for the support installation, and additional credit is given following the reworking of the supports. This allows double production credit to be given to support installations.

The second problem related to procedures was on the drawing notes on Drawing 47W600-0-4 R16. Note 6e on Routing and Separation Instructions stated: "Instrument lines must be physically separated from larger pipes as far as practicable and where practical by a minimum of 10 inches, except at a support where both pipes are constrained against movement in the direction of contact. Final acceptability to be determined by the pipe rupture team." This note was changed by FCR I-1370 which was approved 9/2/83 and incorporated in Revision 9 of the drawing on 1/9/84. Prior to this time the note stated: ". . . and at all times by a minimum of 10 inches . . . ." "Final acceptability to be determined by the pipe rupture team" was not included prior to Revision 9.

This change does not affect plant safety because the train separation criteria is covered in other notes. This change removes minimum separation requirements to larger process piping. An inspection of the Unit 2 south valve room revealed that instrument lines were run as close as 2.5 inches to process piping that require mirror insulation. Although such practices did not violate procedures or criteria, the process-line insulation will require notching when installed. There were times when the old requirement of a minimum of 10 inches at all times could not be met. The revision eliminated the requirement that an NCR be generated each time the 10-inch criteria could not be met. By replacing it with the "whenever practical" revision, any minimum criteria was essentially eliminated.

- C. The frequency of IRN generation was reviewed and shown to run less than 10 percent and typically less than 7 percent. Although the IRN is not the only mechanism for identifying potential problems, it should be an indication of the quality of the work being performed.

TENNESSEE VALLEY AUTHORITY  
NUCLEAR SAFETY REVIEW STAFF  
INVESTIGATION REPORT NO. I-85-211-WBN

Milestone 2

SUBJECT: ERT CONCERN NO. IN-85-616-001  
IN-85-140-001

LEAD INVESTIGATOR:

W D Stevens  
W. D. STEVENS

8/30/85  
DATE

INVESTIGATOR:

Bruce F. Siefken  
B. F. SIEFKEN

8/30/85  
DATE

APPROVED BY:

W. A. Harrison  
W. A. HARRISON

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DATE