

KEY ELEMENT 17.0

OFFICE OF NUCLEAR OPERATIONS

(continued)

This concern may be referring to structural welds instead of piping. Structural welds and piping have different code requirements for fit up and final inspection. No holdpoints are required by the TVA procedures for structural welds.

- 17.7 Concern No. EX-85-039-001 regarding weld control (stubs and unused rod). This concern was not substantiated by the audit of applicable procedures. A surveillance program is maintained which included verification of welder identification, the feature being welded and the procedure being used. Variables from the procedure (such as amperage) are verified to assure that welders are using the procedure properly. Welding rods, ovens and controls are monitored to assure that the welder has requested the proper rod, was issued the proper rod, and is using the proper rod.

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TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: WP-02

REPORT TYPE: Welding Project

REVISION NUMBER: 2

TITLE: Inspection of Welds Through Paint

REASON FOR REVISION: N/A

SWEC SUMMARY STATEMENT: N/A

PREPARATION

PREPARED BY:

Original Signed By J. E. Rose

08-25-86

SIGNATURE

DATE

REVIEWS

PEER:

Original Signed By R. M. Bateman

08-25-86

SIGNATURE

DATE

TAS: TECHNICAL REVIEW ONLY

D. W. Stewart

11/19/86

SIGNATURE

DATE

CONCURRENCES

Original Signed By

CEG-H: L. E. Martin

09-12-86

SIGNATURE

DATE

SRP: *Jimmie W. Joffe*

SIGNATURE

12-04-86

DATE

APPROVED BY:

M. V. Ralston

11-19-86

ECSP MANAGER

DATE

N/A

MANAGER OF NUCLEAR POWER
CONCURRENCE (FINAL REPORT ONLY)

DATE

*SRP Secretary's signature denotes SRP concurrences are in files.

2242T

WELDING PROJECT
GENERIC EMPLOYEE CONCERN
EVALUATION REPORT

REPORT NUMBER: WP-02-SQN R2

DATE 08-26-86

SUBJECT: INSPECTION OF WELDS THROUGH PAINT

CONCERNS CONSIDERED: WI-85-013-003
WI-85-041-006
WI-85-041-008
IN-85-458-001
PH-85-040-001
IN-85-767-003
NS-85-001-001
IN-86-019-001

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|R1

PREPARED BY J.E. Rose 8/25/86, OC, WP

REVIEWED BY R.M. Betema 8/25/86, OC, WP

REVIEWED BY R.P. Lynskey 8/25/86, QA, WP

REVIEWED BY D.E. Martin 9/15/86, CEG-H, WELDING

APPROVED BY W.P. Rivin 9/15/86, PROGRAM MANAGER

Revision 1 to this report is being issued to add an employee concern which has been evaluated and determined to involve issues previously evaluated, dispositioned, and closed by the WP.

Revision 2 to this report incorporates comments made by the Senior Review Panel on 8/19/86.

GENERIC EMPLOYEE CONCERN

SUMMARY SHEET

Report Number: WP-02-SQN R2

Report Title: INSPECTION OF WELDS THROUGH PAINT

- I. CONCERNS CONSIDERED:
- WI-85-013-003
 - WI-85-041-006
 - WI-85-041-008
 - IN-85-458-001
 - PH-85-040-001
 - IN-85-767-003
 - NS-85-001-001
 - IN-86-019-001

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II. ISSUES INVOLVED

1. Specifications allow inspection of welds after coating in violation of FSAR and AWS requirements after tests demonstrated that adequate inspections could not be made.
2. There may have been/were welds inspected through primer.
3. Inspectors did not understand thickness provisions for primer and could not have performed an adequate inspection.
4. NRC involvement in approving procedure for inspecting welds through paint.

III. STATEMENT OF CONCERN/ISSUE VALIDITY

Validity: Y____, N X, Substantiated: Y____, N X.

IV. EFFECT ON HARDWARE AND/OR PROGRAM

None

V. JUSTIFICATION

OC and NO procedures did not allow inspections at SQN to be made after priming for original construction. OC procedures specifically stated welding inspections were to be done prior to priming. Nuclear Operations procedures repeat AWS and ASME Codes requirements for the condition of weld surfaces prior to inspection. They do not specifically prohibit painting prior to welding inspections; they do infer it. This has been historically interpreted as a prohibition of painting prior to visual inspection. NO procedures provide for PSI/ISI inspections after painting, but this is after initial installation inspections are performed prior to primer being applied. The NO procedures for in service inspection of previously coated welds are in accordance with ASME Section XI requirements. The audit and inspection verified the procedural commitment.

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VI. RECOMMENDATION AND/OR CORRECTIVE ACTION NEEDED

None

VII. REINSPECTION NEEDED: Y _____, N X .

VIII. ISSUE CLOSURE

Close based on this report.

IX. ATTACHMENTS

1. Text of Employee Concerns
2. Excerpts From Bechtel Audit - Key Elements 10.0 and 14.0

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GENERIC EMPLOYEE CONCERN

Report Number: WP-02-SQN R2

Report Title: INSPECTION OF WELDS THROUGH PAINT

I. SCOPE OF EVALUATION

This engineering analysis covers the following WBN concerns determined to have possible generic implications at SQN:

WI-85-013-003
WI-85-041-006
WI-85-041-008
IN-85-458-001
PH-85-040-001
IN-85-767-003
NS-85-001-001
IN-86-019-001

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II. ISSUES ADDRESSED BY CONCERNS

Each concern was analyzed to determine the issues voiced by the concerned individuals. These issues are as follows:

1. Specifications allow inspection of welds after painting or coating with inorganic zinc primer in violation of FSAR and AWS requirements after tests demonstrated that adequate inspections could not be made.
2. There may have been/were welds inspected through primer.
3. Inspectors did not understand thickness provisions for primer and could not have performed an adequate inspection.
4. NRC involvement in approving procedure for inspecting welds through paint.

III. CONCERN VALIDITY OR SUBSTANTIATION

Review of the OC procedures used at SQN during construction specifically prohibited the practice of inspection of welds after painting. (See Section 4.c to SNP Inspection Instruction No. II-75, "Visual Examination of Weld Joints.")

The Process Specification which allows this practice was initiated in 1982, one year after construction was completed. This specification was not applicable nor was it implemented at SQN.

A review of NO PSI/ISI NDE procedure (N-VT-1) indicates that welds in completed systems which have been originally installed, inspected, and documented to AWS requirements may be inspected without coating removal. This procedure is in accordance with ASME Section XI requirements for in service inspection and applicable only to operational systems which have been previously certified to have been constructed and inspected in accordance with the constructional requirements.

| R2

Issue 4 has no relevancy because the NRC is an Enforcement Regulatory Agency which performs audits and surveillance inspections to ensure compliance with Procedures, Standards, and Regulatory Guides committed to by licenses. NRC reviews and approves the QA program descriptions to assure compliance with regulations. Specific implementing procedures must comply with NRC-approved QA program requirements. Compliance of detailed implementing procedures is accomplished through internal review required by the approved QA program. Verification of implementation is accomplished through NRC inspections and audits, not through formal approval.

In summary, the four issues considered in these concerns are not substantiated due to the following factors:

1. Procedures were and are in effect for OC and NO respectively which provide for initial inspection of welds prior to painting.
2. The Bechtel audit established that those procedures were effectively implemented for both OC and NO.
3. NRC does not formally approve or disapprove specific construction practices.

The results of this analysis confirm that the correct program elements for the control of these activities were addressed and implemented at SQN by both OC and NO. Based upon the foregoing analysis, the issues addressed in the Employee Concerns are closed.

04/03/86
07:52:17

(EMPLOYEE CONCERNS)

LOC	STATUS	RESP	-QIC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
	013		DO				SR	WI-85-013-003	WCDPW

KEYWORDS: REINSPECTION PROGRAM PAINT CRITERIA X: W Y: C Z: N

G29C (CONSTRUCTION SPECIFICATION) ALLOWED WELDS TO BE INSPECTED AFTER PAINTING FROM 1981 THROUGH THE END OF THE WELDING SAMPLING PROGRAM. THIS IS IN VIOLATION OF AWS D1.1. CI HAS NO MORE INFORMATION. (NOTE: THIS ITEM IS CURRENTLY UNDER INVESTIGATION BY ERT. THE REVISION WAS MADE TO SEPARATE THE ORIGINAL 003 CONCERN INTO TWO DISTINCT CONCERNS.)

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: INSPECTION OF WELDS THROUGH PAINT.

LUC	STATUS	RESP	-QIC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
			P3				SR	WI-85-041-006	WCPTI

KEYWORDS: REINSPECTION PROGRAM PAINT X: W Y: N Z: N

AWS WELD INSPECTOR(S) (UNKNOWN) DID NOT UNDERSTAND THE "5 MIL" PROVISION FOR INSPECTION OF COATED (CARBO-ZINC PRIMER) WELDS AS CONTAINED IN REVISIONS OF SPECIFICATION G-29C, PROCEDURE QCP-4.13, AND MEMORANDUM DATED NOVEMBER 1981. INSPECTOR(S) REFERRED TO CRITERIA AS "MILLIAMPS" AND THEREFORE COULD NOT HAVE IMPLEMENTED/INSPECTED FOR CONFORMANCE. CI HAS NO ADDITIONAL INFORMATION. NUC POWER DEPT. CONCERN.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: LACK OF UNDERSTANDING OF PAINT THICKNESS MEASUREMENT FOR VISUAL WELD INSPECTION:

LOC	STATUS	RESP	-QIC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
			P6				SR	WI-85-041-008	WCDPW

KEYWORDS: REINSPECTION PROGRAM PAINT X: W Y: N Z: N

PROCESS SPECIFICATION #3.C.5.4 OF G-29C PERMITTED INSPECTION OF AWS WELDS THROUGH COATING (CARBO-ZINC PRIMER) FOR ELEVEN MONTHS AFTER ENGINEERING EVALUATION/TEST SHOWED THAT WELD QUALITY (POROSITY, CRACKS, ETC) COULD NOT BE INSPECTED THROUGH PAINT. NUC POWER DEPT. CONCERN. CI HAS NO ADDITIONAL INFORMATION.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: INSPECTION OF WELDS THROUGH PAINT.

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(EMPLOYEE CONCERNS)

LOC	STATUS	RESP	-QTC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
		ERT	P6					SR IN-85-458-001	WCDPW

KEYWORDS: REINSPECTION PROGRAM PAINT

X: W Y: C Z: K

TVA USED IMPROPER INSPECTION CRITERIA FOR AWS WELDS - MEMO FROM KNOXVILLE (POSSIBLY ENDES, 1980 OR 1981) ALLOWED INSPECTION THROUGH PAINT. INDIVIDUAL FROM KNOXVILLE (KNOWN) INVESTIGATED THIS, BUT RESULTS ARE UNKNOWN. CI HAS NO MORE INFORMATION.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: INSPECTION OF WELDS THROUGH PAINT.

LOC	STATUS	RESP	-QTC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
			P6					SR PH-85-040-001	WCDPW

KEYWORDS: INSPECTION IMPLEMENTATION PAINT PRIOR-TO

X: W Y: C Z: N

QA HANGERS WERE FREQUENTLY PAINTED BEFORE THE WELDS WERE INSPECTED. AUX. BUILDING, REACTOR BUILDING #1, ELEV. 742'-0", & 745'-0". 1983. CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER DETAILS.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: INSPECTION OF WELDS THROUGH PAINT.

LOC	STATUS	RESP	-QTC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
			P6					SR IN-85-767-003	WCDPW

KEYWORDS: REINSPECTION PROGRAM PAINT CRITERIA

X: W Y: C Z: Y

CI EXPRESSED CONCERN REGARDING THE INSPECTION OF PAINTED WELDS. CI FEELS NRC IS INVOLVED DUE TO HAVING APPROVED THE PROCEDURE OF INSPECTING WELDS THAT ARE PAINTED. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIALITY. CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: 1.INSPECTION OF WELDS THROUGH PAINT.
2.NRC INVOLVEMENT IN APPROVING PROCEDURE FOR INSPECTING WELDS THROUGH PAINT.

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(EMPLOYEE CONCERNS)

Page: 1

CAT	ISSUE	PLANT	PRIORITY	ORG	QTC	EGG	INSP	SD	RD	GD	IO	-----CONCERN-----
WE	SFB	W	1	EGG		571	Y	SR		B		NS-85-001-001

KEYWORDS: REINSPECTION PROGRAM PAINT

PROB: WCDPW

WELDS (AWS) INSPECTED SUBSEQUENT TO PROTECTIVE COATING (CARBOZING PRIMER) APPLICATION; FINAL VISUAL WELD EXAMINATION OF STRUCTURAL WELDS IN CATEGORY I STRUCTURES, INCLUDING PIPE HANGERS, CABLE TRAY SUPPORTS AND DUCT SUPPORTS; UNIT 1 & 2

IR: NS-85-001-001 V STAT: RC: EC-SPL-8 WP-02-SQN

TECHNICAL COMMENTARY:

CAT	ISSUE	PLANT	PRIORITY	ORG	QTC	EGG	INSP	SD	RD	GD	IO	-----CONCERN-----
WE		W	1	EGG		571	Y	SR				IN-86-019-001

KEYWORDS: REINSPECTION PROGRAM PAINT

PROB: WCDPW

R1 | CI IS CONCERNED THAT WELDS WERE ACCEPTED THROUGH CARBO-ZING. INSPECTORS WERE DIRECTED VIA MEMO TO ACCEPT WELDS THROUGH PAINT. CI COULD NOT PROVIDE ANY ADDITIONAL INFORMATION. UNIT 1. CONSTRUCTION DEPT. CONCERN.

IR: STAT: RC: EC-SPL-8 WP-02-SQN

TECHNICAL COMMENTARY:

KEY ELEMENT NO. 1.0

OFFICE OF CONSTRUCTION
PREPARATION FOR AUDIT OF WELDING ACTIVITIES

Prior to the start of the audit, the audit team developed an audit plan and identified applicable documents, specific manuals, specifications and procedures which described and implemented the TVA welding activities.

The audit team developed an audit checklist to address all elements identified in the TVA work plan in addition to analysis of employee concerns for significance and integration into the checklist.

The audit team identified and selected a cross section of welded systems from applicable TVA specifications. Welds were randomly selected from drawings applicable to each individual system for programmatic audit.

KEY ELEMENT 2.0

OFFICE OF CONSTRUCTION
ADEQUACY OF DESIGN OUTPUT DOCUMENTS

For items selected for audit, drawings, welding procedures and supporting records were reviewed and showed compliance with the TVA program and procedures.

OBSERVATION

One observation was noted during the audit of the welding output documents.

The TVA detailed welding procedures (DWP) did not show the name of the key organizational group. By showing the name of the key unit that is responsible for the welding control documents, any questions concerning the welding documents could have been readily resolved.

KEY ELEMENT 3.0

OFFICE OF CONSTRUCTION
INITIAL WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder qualification records and supporting documentation, TVA welders were qualified in accordance with TVA programs and procedures.

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KEY ELEMENT 4.0

OFFICE OF CONSTRUCTION
MAINTENANCE OF WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder maintenance records, TVA welders demonstrated welding within certification expiration dates as required by TVA programs and procedures.

KEY ELEMENT 5.0

OFFICE OF CONSTRUCTION
RENEWAL OF WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder qualification records and maintenance records, TVA welders were requalified in accordance with TVA programs and procedures. In many cases TVA welders were given the original qualification test for renewal which exceeded ASME IX and AWS D1.1 requirements for renewal.

KEY ELEMENT 6.0

OFFICE OF CONSTRUCTION
INITIAL WELDING INSPECTION PERSONNEL QUALIFICATION

Qualification/Certification records for nondestructive examination personnel (weld inspection) were reviewed for compliance with TVA NDE personnel qualification procedures covering a time span from January, 1971 through March, 1983.

TVA personnel qualification procedures used for the qualification/certification of NDE personnel complied with and referenced the applicable edition of SNT-TC-1A (American Society of Nondestructive-Testing).

Records evidencing qualifications and certifications contained sufficient detail to confirm compliance with applicable codes, standards and specifications in effect during construction activities.

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KEY ELEMENT 7.0

OFFICE OF CONSTRUCTION
MAINTENANCE OF WELDING INSPECTION PERSONNEL QUALIFICATION

Review of inspection personnel qualification records for completeness and recertification confirmed compliance with TVA procedures used for qualification certification of NDE personnel. Recertification of inspection personnel was accomplished as required by applicable procedures. In many instances recertification of personnel was accomplished on a more frequent schedule than required by TVA procedures or industry standards, (SNT-TC-1A).

KEY ELEMENT 8.0

OFFICE OF CONSTRUCTION
RENEWAL OF WELDING INSPECTION PERSONNEL QUALIFICATION

Renewal of all welding inspection personnel qualifications selected for audit indicated compliance with referenced TVA programs and procedures.

KEY ELEMENT 9.0

OFFICE OF CONSTRUCTION
USE OF APPROPRIATE WELDING PROCEDURES

Detailed welding procedures and qualification records applicable to the audit items were reviewed. Postweld heat treatment records were audited and showed compliance with the TVA program and procedures.

KEY ELEMENT 10.0

OFFICE OF CONSTRUCTION
USE OF APPROPRIATE INSPECTION PROCEDURES

For items selected for audit, appropriate inspection procedures were identified for use. Procedure review showed compliance with TVA program requirements and referenced codes and standards.

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KEY ELEMENT 11.0

OFFICE OF CONSTRUCTION
USE OF APPROPRIATELY TRAINED AND QUALIFIED PERSONNEL

Records of all certified personnel audited indicated that appropriate training had been administered and qualifications were in accordance with TVA programs and procedures.

For personnel trained and qualified in visual examinations, actual copies of written examinations were maintained as evidence of training and qualification.

Training records of personnel not requiring certification were not maintained since they were classified as Duration of Construction (DOC) documents. Classification as DOC documents was in accordance with TVA programs and procedures and referenced codes and standards.

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KEY ELEMENT 12.0

OFFICE OF CONSTRUCTION
USE AND CONTROL OF WELDING FILLER METALS

Audit Finding - AF-01-OC

Certified material test reports (CMTR's) for welding filler metals did not comply with TVA project specifications. Details on each package are identified in Attachment A.

In general, TVA procedures required criteria over and above ASME filler metal specifications and had no impact on weld quality. For example, a CMTR stated that heat treatment was done at 1150°F for 6 hours. The TVA project specification required the heat treatment to be 1150°F for 10 hours. A letter in the contract file from TVA addressed this deviation and gave permission to use as is. However, the letter was not signed and did not identify manufacturer, heat or lot number.

This finding indicates that the TVA procedures were not followed although referenced code requirements were complied with. The data reviewed during the audit strongly supports the conclusion that there was no impact on the actual weld quality related to control of welding filler materials.

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SUMMARY OF FINDINGS FOR ELEMENT 12.0 (Office of Construction)
(AF-01-OC)

<u>Package</u> (as referenced in checklist)	<u>Weld</u> <u>Filler Metal</u> <u>Classification</u>	<u>Project</u> <u>Specification</u>	<u>SFA</u> <u>Spec.</u>	<u>Heat No.</u>	<u>Lot No.</u>	<u>Comments</u>
29.	E 7018	PF 1012 rev. 2	5.1	422N1151	-	See comment 1.
30.	E 70S-3	PF 1019 rev. 2	5.18	623389	-	See comment 2 & 3
34.	E 7018	PF 1012 rev. 2	5.1	01W019	2241342	See comment 1.
35.	E 7018	PF 1012 rev. 2	5.1	412L7101	3034015	See comment 1.
36. -	E 7018	PF 1012 rev. 2	5.1	402N8581	2443662	See comment 1.
37.	E 70S-3	PF 1019 rev. 2	5.18	431J5621	-	See comment 3.
38.	E 70S-3	PF 1019 rev. 2	5.18	625537	-	See comment 3.
39.	E 7018	PF 1012*	5.1	411N0471	-	See comment 1.
40.	E 7018	PF 1012 rev. 2	5.1	08R217	-	See comment 1.
46.	E 70S-3	PF 1019 rev. 2	5.18	421E9101	-	See comments 2 & 3.
48.	E 70S-3	PF 1019 rev. 4	5.18	422T7432	-	See comment 3.

Comment (1): CMTR states heat treatment (h.t.) @ 1125° F ± 25° for 8 hours. The project spec. required the h.t. to be @ 1150° F for 10 hrs.

Comment (2): CMTR states h.t. @ 1150° F for 6 hours. The project spec. required the h.t. to be 1150° for 10 hrs.

Comment (3): The project spec. and SFA 5.18 requires the yield strength. CMTR did not state this information.

* No rev. given on CMTR or receiving report. Assume rev. 2

KEY ELEMENT 13.0

OFFICE OF CONSTRUCTION
IN PROCESS CONTROL OF WELDING

The inprocess control procedures for welding were identified for the items that were selected for the audit. TVA documents that controlled welding activities and operation checklists were reviewed. The review results showed the construction work was accomplished in accordance with the TVA welding program and procedures.

KEY ELEMENT NO. 14.0

OFFICE OF CONSTRUCTION
DOCUMENTATION OF TECHNICAL AND QUALITY ACTIVITIES

Reference Key Elements 2.0 through 13.0, and 15.0 through 17.0.

KEY ELEMENT 15.0

OFFICE OF CONSTRUCTION
NONCONFORMANCES AND CORRECTIVE ACTIONS

Review of nonconformances and corrective action reports for completion and closure, confirmed compliances with TVA program and procedural requirements for this activity.

KEY ELEMENT 16.0

OFFICE OF CONSTRUCTION
TRAINING PROGRAMS

Training requirements for personnel not requiring certification were reviewed for compliance to the TVA program training manual and referenced procedures. Since limited data was required to be retained on individual attendance and participation, verification of program existence and control within TVA was the primary objective accomplished by the audit element.

For training programs requiring certification, reference Key Element 11.0 of this report for details.

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KEY ELEMENT 17.0

OFFICE OF CONSTRUCTION
EMPLOYEE CONCERNS

- 17.1 Concern No. XX-85-049-X03 and XX-85-101-006 regarding welder certification. This concern was not substantiated by the audit of a random sampling of 37 welders which involved 124 welder qualification records from 1970 to 1979.
- 17.2 Concern No. XX-85-69-001 and XX-85-069-X05 regarding welder certification and on-the-job training. This concern was not substantiated by the audit of a random sampling of 37 welders which involved 124 welder qualification records from 1970 to 1979.
- 17.3 Concern No. XX-85-108-001 and XX-85-108-002 regarding weld inspections. This concern could not be substantiated as evidenced by audit of a minimum of 14 inspection procedures.
- 17.4 Concern No. IN-85-476-004 and WI-85-041-002 regarding welding inspectors training program. This concern could not be substantiated as evidenced by audit of training programs.
- 17.5 Concern No. WI-85-053-004 and XX-85-68-006 regarding weld rod control satisfying code requirements. This concern was not substantiated by audit of a random sampling of 48 receiving documents and associated CMTR's which involved 83 heat and/or lot number, 8 types of weld metal covering the years 1972 to 1980. This represents approximately 572,000 pounds of weld metal. Although audit finding, AF-01-01, against Key Element No. 12 of this report is documented against the TVA program, it involves details required by TVA procedures over and above that required by ASME filler metal specifications and had no impact on weld quality.

The statement in the concern shows a lack of understanding of the code. For example, ASME III, NB-4122 requires traceability of the weld filler metal but gives two methods to chose from. Either trace to each component or ensure the specified material is used by a control procedure. TVA's program required that all the material meet the standards and, therefore, did not require traceability to a component.

KEY ELEMENT 17.0

OFFICE OF CONSTRUCTION
EMPLOYEE CONCERNS

(continued)

- 17.6 Concern No. XX-85-054-001 regarding weld inspection by craft. This concern was not substantiated by the audit of 13 inspectors pulled from the weld history records for the welds reviewed in the audit as well as by an additional random sampling of 13 inspectors. No holdpoints were found to have been signed off by anyone other than certified inspectors.

This concern may be referring to structural welds instead of piping. Structural welds and piping have different code requirements for fit up and final inspection. No holdpoints are required by the TVA procedures for structural welds.

- 17.7 Concern No. EX-85-039-001 regarding weld control (stubs and unused rod). This concern was not substantiated by the audit of applicable procedures. A daily surveillance program was maintained which included verification of welder identification, the feature being welded and the procedure being used. Variables from the procedure (such as amperage) were verified to assure that welders were using the procedure properly. Welding rods, ovens and controls were monitored to assure that the welder had requested the proper rod, was issued the proper rod, and was using the proper rod. Approximately 300 surveillances a month were performed during years of peak construction.

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KEY ELEMENT NO. 1.0

NUCLEAR OPERATIONS
PREPARATION FOR AUDIT OF WELDING ACTIVITIES

Prior to the start of the audit, the audit team developed an audit plan and identified applicable documents, specific manuals, specifications and procedure which described and implemented the TVA welding activities.

The audit team developed an audit checklist to address all elements identified in the TVA work plan in addition to analysis of employee concerns for significance and integration into the checklist.

The audit team identified and selected a cross section of welded systems based on availability, eg: only systems which had been modified, repaired or replaced fell under Nuclear Operations program for audit. Welds were randomly selected from drawings applicable to each individual system for programmatic audit.

KEY ELEMENT 2.0

NUCLEAR OPERATIONS
ADEQUACY OF DESIGN OUTPUT DOCUMENTS

For items selected for audit, drawings, welding procedures and supporting records were reviewed and showed compliance with the TVA program and procedures.

OBSERVATION

One observation was noted during the audit of the welding output documents. The TVA detailed welding procedures (DWP) did not show the name of the key organizational group. By showing the name of the key unit that is responsible for the welding control documents, any questions concerning the welding documents could have been readily resolved.

KEY ELEMENT NO. 3.0

NUCLEAR OPERATIONS
INITIAL WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder qualification records and supporting documentation, TVA welders are qualified in accordance with TVA programs and procedures.

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KEY ELEMENT NO. 4.0

NUCLEAR OPERATIONS
MAINTENANCE OF WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder maintenance records, TVA welders demonstrated welding within certification expiration dates as required by TVA programs and procedures.

KEY ELEMENT NO. 5.0

NUCLEAR OPERATIONS
RENEWAL OF WELDER OR WELDING OPERATOR QUALIFICATIONS

Based on audit of welder qualification records and maintenance records, TVA welders are requalified in accordance with TVA programs and procedures.

KEY ELEMENT 6.0

NUCLEAR OPERATIONS
INITIAL WELDING INSPECTION PERSONNEL QUALIFICATIONS

All inspector qualification records (NDE, to include visual examination) audited indicated compliance with TVA programs and procedures and the referenced codes and standards.

OBSERVATION

TVA Form 6780 (as referenced in procedure 0202.14) used to document NDE qualification and certification does not clearly identify the recertification status of the individual. Additionally, certification authority is referenced as being in compliance with TVA program requirements when individuals are actually certified in accordance with the specific requirements of Procedure 0202.14 (formerly N75C01), Qualification Certification Program for NDE Personnel.

Program clarity and definition could be improved by adding either the certification expiration date or recertification status as an entry on Form 6780. Specific reference to Procedure 0202.14 on certification forms (6780) would provide for direct reference and compliance with TVA NDE personnel qualification, certification requirements and practices for each NDE method employed.

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KEY ELEMENT 7.0

NUCLEAR OPERATIONS
MAINTENANCE OF WELDING INSPECTION
PERSONNEL QUALIFICATIONS

All welding inspection personnel qualification records audited were in compliance with TVA programs and procedures and the referenced codes and standards.

The observation detailed in 6.0, "Initial Welding Inspection Personnel Qualifications" is also applicable to this element with no changes or deletions.

KEY ELEMENT 8.0

NUCLEAR OPERATIONS
RENEWAL OF WELDING INSPECTION PERSONNEL QUALIFICATION

For all records of personnel audited, renewal of welding inspection personnel qualifications are in compliance with TVA programs and procedures.

KEY ELEMENT 9.0

NUCLEAR OPERATIONS
USE OF APPROPRIATE WELDING PROCEDURES

Welding procedures and heat treating procedures were audited against the referenced Nuclear Operations documents and found to be in compliance.

KEY ELEMENT 10.0

NUCLEAR OPERATIONS
USE OF APPROPRIATE INSPECTION PROCEDURES

For all items audited, applicable inspection procedures were identified for use as referenced in TVA program and procedures.

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KEY ELEMENT 11.0

NUCLEAR OPERATIONS
USE OF APPROPRIATELY TRAINED AND QUALIFIED PERSONNEL

Personnel Requiring Certification:

By review of personnel training records and governing TVA training procedures, use of appropriately trained and qualified personnel was verified.

Personnel Not Requiring Certification:

Training records for personnel not requiring certifications were reviewed to TVA program procedures, (General Employee Training - GET-4).

OBSERVATION

Procedure AI-14 (Plant Training Program) Revision 31 and Area Plan 0202.04 Revision 0 require retraining on a biennial basis for general employee GET-4 Instructions to QA/QC.

A review of training records for general employee training GET-4, revealed 4 out of 12 individuals were overdue for retraining.

Procedure AI-14 and Area Plan 0202.04 do not provide for any penalty or restriction of activity for failure to comply with the retraining time frame.

Recommendation - Subject plant training program AI-14 should be evaluated to determine need for retraining time frame and provide for restrictions or deletion of the requirement.

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KEY ELEMENT 12.0

NUCLEAR OPERATIONS
USE AND CONTROL OF WELDING FILLER METALS

OBSERVATION

The site controlling procedure for "Receipt Inspection" is unnecessarily long and confusing (reference AI-11, Revision 38, 66 pages). Extractions are for example:

- "2.5.2 As part of the receipt inspection of Level I items, Level II substituted items, or Level II items to which Part 21 applies, either purchased by NUC PR or EN DES and shipped from the vendor to NUC PR, the QC inspector shall review and verify manufacturing documentation and material certifications of physical properties as follows:
- a. Manufacturing Documentation--Assurance that the item received was fabricated, tested, and inspected prior to shipment in accordance with applicable code, specification, purchase contract, and/or drawings.
 - b. Physical Properties--Assurance that physical properties conform to the specified requirements and that chemical and physical test reports, if required, meet the requirements."

Another controlling procedure, power stores SIL-8, "QA Records," is poorly worded and organized. Personnel can infer four places for CMTR's to be filed. For example:

- " J. The receiving report (TVA 209), packing list w/related documents, SQA45 (Attachment 11), TVA 2652 (Purchase Request), Quality Assurance Certifications, changed QA Level Assignments, Material Receipt Inspection Report (AI-11, Attachment 1), ECN Material Receipt Inspection Report AI-11, Attachment 5), AI-11, Attachment 16, NCI Tag (TVA 7830), Recommended Disposition of Nonconforming Items (AI-11, Attachment 10), OSSD or D (TVA 210), TVA 9640, and TVA 5050 are filed in the procurement document folder or attached to the TVA Form 575 or attached to the procurement document or filed under procurement document number."

Yet another controlling document, N73M2 "Process Specification for Welding, Heat Treatment and Allied Field Operations" requires that CMTR's shall be approved by the metallurgy and standards group prior to release of welding materials from power stores.

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KEY ELEMENT 12.0

NUCLEAR OPERATIONS
USE AND CONTROL OF WELDING FILLER METALS

(continued)

Too many controlling procedures are required to be used simultaneously to do the job of control of welding filler material effectively. This puts the program and the people trying to enforce the program in a vulnerable position.

The material receipt inspection report (Attachment 1 of AI-11) refers to an item on a shipping ticket or a contract document. It does not list what is being inspected, such as weld filler metal with heat number. One document ties to another before either gives the complete information.

The program could be condensed and simplified to be more functional and less vulnerable to error and misinterpretation by the users.

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KEY ELEMENT 13.0

NUCLEAR OPERATIONS
INPROCESS CONTROL OF WELDING

Auditing covered the TVA documents that controlled the welding operations. The audit results confirmed compliance with the inprocess control of the referenced TVA documents.

KEY ELEMENT NO. 14.0

NUCLEAR OPERATIONS
DOCUMENTATION OF TECHNICAL AND QUALITY ACTIVITIES

Reference Key Elements 2.0 through 13.0 and 15.0 through 17.0.

KEY ELEMENT 15.0

NUCLEAR OPERATIONS
NONCONFORMANCES AND CORRECTIVE ACTIONS

Review of nonconformances and corrective action reports for completion and closure, confirmed compliances with TVA program and procedural requirements for this activity.

KEY ELEMENT 16.0

NUCLEAR OPERATIONS
TRAINING PROGRAMS

Training requirements for personnel not requiring certification applicable to the welding program were reviewed for compliance to the TVA program. Reference Key Element No. 11.

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KEY ELEMENT 17.0

OFFICE OF NUCLEAR OPERATIONS

- 17.1 Concern No. XX-85-049-X03 and XX-85-101-006 regarding welder certification. This concern was not substantiated by the audit of a random sampling of 25 welders which involved 107 welder qualification records from 1972 to 1985.
- 17.2 Concern No. XX-85-69-001 and XX-85-069-X05 regarding welder certification and on-the-job training. This concern was not substantiated by the audit of a random sampling of 25 welders which involved 107 welder qualification records from 1972 to 1985.
- 17.3 Concern No. XX-85-108-001 and XX-85-108-002 regarding weld inspections. This concern could not be substantiated as evidenced by audit of a minimum of 14 inspection procedures.
- 17.4 Concern No. IN-85-476-004 and WI-85-041-002 regarding welding inspectors training program. This concern could not be substantiated as evidenced by audit of training programs.
- 17.5 Concern No. W1-85-053-004 and XX-85-68-006 regarding weld rod control satisfying code requirements. This concern was not substantiated by audit of a random sampling of 25 receiving documents and associated CMTR's which involved 25 heat and/or lot number, 6 different types of weld metal covering the years 1976 to 1985. This represents approximately 19,000 pounds of weld filler metal.

The statement in the concern shows a lack of understanding of the code. For example, ASME III, NB-4122 requires traceability of the weld filler metal but gives two methods to choose from. Either trace to each component or ensure the specified material is used by a control procedure. TVA's program required that all the material meet the standards and, therefore, did not require traceability to a component.

- 17.6 Concern No. XX-85-054-001 regarding weld inspection by craft. This concern was not substantiated by the audit of 4 inspectors pulled from the weld history records for the welds reviewed in the audit as well as by an additional random sampling of 10 inspectors. No holdpoints were found to have been signed off by anyone other than certified inspectors.

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KEY ELEMENT 17.0

OFFICE OF NUCLEAR OPERATIONS

(continued)

This concern may be referring to structural welds instead of piping. Structural welds and piping have different code requirements for fit up and final inspection. No holdpoints are required by the TVA procedures for structural welds.

- 17.7 Concern No. EX-85-039-001 regarding weld control (stubs and unused rod). This concern was not substantiated by the audit of applicable procedures. A surveillance program is maintained which included verification of welder identification, the feature being welded and the procedure being used. Variables from the procedure (such as amperage) are verified to assure that welders are using the procedure properly. Welding rods, ovens and controls are monitored to assure that the welder has requested the proper rod, was issued the proper rod, and is using the proper rod.

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TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: WP-09

REPORT TYPE: Welding Project

REVISION NUMBER: 1

TITLE: Weld Inspection Criteria Used For SQN
Construction

REASON FOR REVISION: N/A

SWEC SUMMARY STATEMENT: N/A

PREPARATION

PREPARED BY:

Original Signed By R. M. Bateman
SIGNATURE

08-25-86
DATE

REVIEWS

PEER:

Original Signed By J. E. Rose
SIGNATURE

08-25-86
DATE

TAS: TECHNICAL REVIEW ONLY

DW Stewart
SIGNATURE

11/19/86
DATE

CONCURRENCES

Original Signed By
CEG-H: L. E. Martin

09-03-86

SIGNATURE

DATE

SRP: *James R. Purcell*
SIGNATURE*

12-4-86
DATE

APPROVED BY:

MUR Kelly
ECSP MANAGER

11-19-86
DATE

N/A
MANAGER OF NUCLEAR POWER
CONCURRENCE (FINAL REPORT ONLY)

DATE

*SRP Secretary's signature denotes SRP concurrences are in files.

WELDING PROJECT
GENERIC EMPLOYEE CONCERN
EVALUATION REPORT

REPORT NUMBER: WP-09-SQN, R1

DATE 08-26-86

SUBJECT: WELD INSPECTION CRITERIA USED FOR SQN CONSTRUCTION

CONCERN CONSIDERED: IN-85-406-002

PREPARED BY R. M. Bateman 8/25/86, OC, WP

REVIEWED BY J. E. Roe 8/25/86, OC, WP

REVIEWED BY R. P. Lynskey 8/25/86, QA, WP

REVIEWED BY S. E. [Signature] 9/3/86, CEG-H, WELDING

APPROVED BY W. R. Brown 9/3/86 PROGRAM MANAGER

Revision -1 expanded on weld inspection procedures available prior to 1979 to incorporate comments made by the Senior Review Panel on 8/19/86

GENERIC EMPLOYEE CONCERN

SUMMARY SHEET

Report Number: WP-09-SQN, R1

Report Title: WELD INSPECTION CRITERIA USED FOR SQN CONSTRUCTION

I. CONCERNS CONSIDERED: IN-85-406-002

II. ISSUES INVOLVED

Prior to 1979, there was no specific weld inspection criteria for use by inspection personnel.

III. STATEMENT OF CONCERN/ISSUE VALIDITY

Validity: Y _____, N X, Substantiated: Y _____, N X

IV. EFFECT ON HARDWARE AND/OR PROGRAM

None

V. JUSTIFICATION

There was inspection criteria available.

VI. RECOMMENDATION AND/OR CORRECTIVE ACTION NEEDED

None

VII. REINSPECTION NEEDED: Y _____, N X.

VIII. ISSUE CLOSURE

By this report.

IX. ATTACHMENTS

1. Text of The Employee Concern
2. Excerpt From Bechtel Audit - Key Element 10.0

GENERIC EMPLOYEE CONCERN

Report Number: WP-09-SQN, R1

Report Title: WELD INSPECTION CRITERIA USED FOR SQN CONSTRUCTION

I. SCOPE OF EVALUATION

This engineering analysis covers WBN Employee Concern Number IN-85-406-002 which was deemed to have possible generic implications at SQN.

II. ISSUES ADDRESSED BY CONCERN(S)

The subject concern was analyzed to determine the issue voiced by the concerned individual(s). This issue is as follows:

Prior to 1979, there was no specific weld inspection criteria for use by inspection personnel.

III. CONCERN VALIDITY OR SUBSTANTIATION

The base requirement for inspection procedures comes from Criteria V and X of 10 CFR 50, Appendix B, and ANSI N45.2. The principle of inspection procedures is a basic and integral part of the TVA Quality Assurance Program. The SQN Division of Construction Quality Assurance Program included the requirement for procedural control of quality affecting/quality assuring activities in SNP Construction Procedure No. P-1, "Preparation of Construction Procedures and Inspection Instructions," which was originally issued on December 16, 1971. Inspection procedures were generated in accordance with the provisions of this document and were issued for use at SQN.

General Construction Specification G-29 was first formally transmitted to the implementing organizations on July 22, 1971. This specification contained the weld inspection acceptance criteria and technical documentation requirements.

The Division of Construction (now OC) at SQN originally conveyed the requirements in site implementing procedures. These procedures were oriented by engineering discipline responsible for the feature. The documentation requirements were specified in checklist format and the appropriate G-29 process specification was referenced for the acceptance criteria.

1. SNP-M-3 issued 1/24/72 "Welding Surveillance and Weld Procedure Assignment"
2. SNP-M-7 issued 8/25/72 "Erection and Documentation Requirements for QA Piping Systems"
3. SNP-C-2 issued 12/12/71 "Erection and Inspection of Structural Steel"
4. SNP-M-20 issued 11/14/74 "Pipe Support Installation and Documentation"

5. SNP-E3 issued 12/6/74 "Installation and Inspection of Seismic Supports for Conduit and Lighting Fixtures"
6. SNP-I5 issued 5/1/75 "Fabrication, Installation, and Inspection of Seismic Instrumentation Line Supports and Wall-Mounted Panels"
7. SNP-M-23 issued 3/31/75 "Fabrication, Installation, and Inspection of Heating, Ventilating, and Air-Conditioning Duct Supports"
8. SNP-M-27 issued 5/28/76 "Fabrication, Installation, and Cleanliness Requirements for Heating Ventilating, and Air-Conditioning Duct Systems"

Restructure of the Site Quality Assurance Procedures in 1977 resulted in the following specific Inspection Instructions conveying the welding inspection criteria by the type of inspection being performed:

1. SNP-II-74 issued 2/14/77 "Fit-Up and Cleanliness Inspection"
2. SNP-II-75 issued 1/31/77 "Visual Examination of Welded Joints"
3. SNP-II-76 issued 3/16/77 "Liquid Penetrant Inspection"
4. SNP-II-77 issued 3/16/77 "Magnetic Particle Inspection"
5. SNP-II-78 issued 2/22/77 "Ultrasonic Examination"
6. SNP-II-79 issued 4/22/77 "Radiographic Examination"

This network of procedures provided the basis for welding inspection activities at SQN during construction. The Welding Project has reviewed these procedures and determined that the necessary detail was present and that the requirements were accurately presented.

Overviews by the TVA QA organization and by NRC inspectors were routinely performed during the construction of Sequoyah Nuclear Plant. (These overviews have continued during the operational phase.) Procedural deficiencies noted by overviews were tracked, corrected, and closed during the appropriate timeframe.

In addition, the Bechtel SQN Implementation Audit performed in January 1986 directly examined the adequacy of inspection procedures and their implementation in Key Element 10.0, "Use of Appropriate Inspection Procedures" (attached). The audit indicated that the review of the inspection procedures showed compliance with TVA program requirements and referenced codes and standards.

In summary, the issue considered in the concern is not substantiated due to the following factors:

1. Inspection procedures which delineated code and standard requirements were in effect at SQN for OC.
2. The Bechtel SQN Implementation Audit provides an independent verification of the adequacy of these procedures.

Based upon the foregoing analysis, the issue addressed in this Employee Concern is closed.

07/18/86
09:01

(EMPLOYEE CONCERNS)

STATUS	RESP	-QIC-	PPP	CFR	INSP	IC	-----CONCERN-----	PROBLEM ID
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	EG&G	DO				SR	IN-85-406-002	WCDPW

KEYWORDS: INSPECTION PROGRAM CRITERIA

X: W Y: C Z: N

PRIOR TO 1979 THERE WAS NO SPECIFIC WELD INSPECTION CRITERIA FOR USE BY INSPECTION PERSONNEL. IT IS BELIEVED THAT THIS PROBLEM WAS VALID TVA SYSTEM WIDE-ALL PLANTS.

TECHNICAL COMMENTARY:

ISSUE CONSIDERED: WELD INSPECTION CRITERIA USED FOR SQN CONSTRUCTION

KEY ELEMENT 7.0

OFFICE OF CONSTRUCTION
MAINTENANCE OF WELDING INSPECTION PERSONNEL QUALIFICATION

Review of inspection personnel qualification records for completeness and recertification confirmed compliance with TVA procedures used for qualification certification of NDE personnel. Recertification of inspection personnel was accomplished as required by applicable procedures. In many instances recertification of personnel was accomplished on a more frequent schedule than required by TVA procedures or industry standards, (SNT-TC-1A).

KEY ELEMENT 8.0

OFFICE OF CONSTRUCTION
RENEWAL OF WELDING INSPECTION PERSONNEL QUALIFICATION

Renewal of all welding inspection personnel qualifications selected for audit indicated compliance with referenced TVA programs and procedures.

KEY ELEMENT 9.0

OFFICE OF CONSTRUCTION
USE OF APPROPRIATE WELDING PROCEDURES

Detailed welding procedures and qualification records applicable to the audit items were reviewed. Postweld heat treatment records were audited and showed compliance with the TVA program and procedures.

KEY ELEMENT 10.0

OFFICE OF CONSTRUCTION
USE OF APPROPRIATE INSPECTION PROCEDURES

For items selected for audit, appropriate inspection procedures were identified for use. Procedure review showed compliance with TVA program requirements and referenced codes and standards.

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CONSTRUCTION CATEGORY Enclosure 3

ECTG WRITER'S GUIDE		ELEMENT REPORT FORMAT
1.0	Issue Characterization	I. Introduction II. Summary of Perceived Problem
2.0	Summary	IV. Summary of Findings Conclusions (Portion)
3.0	Evaluators	Cover Sheet Information
4.0	Evaluation Process	III. Evaluation Methodology
5.0	Findings	IV. Summary of Findings
6.0	Root Cause (Collective Significance)**	V. Root Cause ** <u>Overall</u> Root Cause will not be considered at this report level.
7.0	Attachments/ List of Concerns	VIII. Attachments
Other items included in Construction Element Reports		VI. Corrective Actions (To be provided by line organizations) VII. Generic Applicability

MATERIALS CONTROL Enclosure 3

ECTG WRITER'S GUIDE		ELEMENT REPORT FORMAT
1.0	Issue Characterization	I. Introduction II. Summary of Perceived Problem
2.0	Summary	IV. Summary of Findings Conclusions (Portion)
3.0	Evaluators	Cover Sheet Information
4.0	Evaluation Process	III. Evaluation Methodology
5.0	Findings	IV. Summary of Findings
6.0	Root Cause (Collective Significance)**	V. Root Cause ** <u>Overall</u> Root Cause will not be considered at this report level.
7.0	Attachments/ List of Concerns	VIII. Attachments
Other items included in Element Reports		VI. Corrective Actions (To be provided by line organizations) VII. Generic Applicability

ECTG WRITER'S GUIDE	NSRS/ERT*	WELD PROJECT (WP) REPORTS	NOTES/COMMENTS
1.0 Issue Characterization	Background Info (Section I)	Issues Addressed By Concerns (Section I)	
2.0 List Of Concerns	Background Info (Section I)	Scope of Evaluation (Section I and Att-1)	
3.0 Evaluators	Coversheet	Coversheet	
4.0 Evaluation Process	Scope (Section II)	Not Delineated As Part Of The WP Reports however it is addressed as part of the Weld Projects Program Manual	
5.0 Findings	Findings (Section III)	Validity or Substantiation (Section III)	
6.0 Root Cause** and Conclusion	Conclusion and Recommendations (Section IV)***	Validity or Substantiation (Section III)	*** Note that recommendations are not included in element reports under the current ECTG program. ** Overall Root Cause will not be considered at this report level.

*The Weld Project has endorsed a number of ERT Reports and general issue level reports as adequately addressing the concerns at this level for SQN.

SEQUOYAH
ELEMENT REPORT

EMPLOYEE
CONCERN
NUMBER

ISSUE

Construction 11106 (Initial)	XX-85-053-002 (EN 22400)* XX-85-053-001 (QA 80504)*	Hanger Inspection Documentation
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*Database subcategory as shown in 9/26/86 printout.

Material Control 40709 (Initial)	XX-85-027-X04	Material Personnel - Search for Defection Material
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Material Control 40302 (Final)	PH-85-035-002	Valve (Cracked) as Related to Material
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NOTE: Initial report transmitted 9/29/86.

Welding WP-01-SQN, R3 (Final)	WI-85-053-004 (WE 50300)*	ASME Welding Material Control, Traceability, Accountability, and Conditioning
	XX-85-068-006 (WE 50300)*	
	IN-85-441-003 (WE 50300)*	
	IN-85-234-001 (WE 50300)*	
	IN-85-424-001 (WE 50300)*	
	IN-85-426-001 (WE 50300)*	
	IN-85-352-002 (WE 50300)*	
	EX-85-039-001 (WE 50300)*	
	IN-85-337-002 (WE 50300)*	
	IN-85-424-004 (WE 50300)*	
	IN-85-424-007 (WE 50300)*	
	IN-85-453-009 (WE 50300)*	
	IN-86-150-001 (WE 50300)*	
	IN-86-167-001 (WE 50300)*	
	WI-85-041-001 (WE 50300)*	
	IN-85-454-004 (WE 50300)*	
	IN-85-672-003 (WE 50100)*	
EX-85-021-001 (WE 50300)*		
IN-85-424-006 (WE 50300)*		

*Data base subcategory as shown in 9/26/86 printout.

NOTE: Initial report transmitted 9/17/86.

SEQUOYAH
ELEMENT REPORT

EMPLOYEE
CONCERN
NUMBER

ISSUE

Welding WP-02-SQN, R2 (Final)	WI-85-013-003 (WE 50700)*	Inspection of Welds Through Paint
	WI-85-041-006 (WE 50700)*	
	WI-85-041-008 (WE 50700)*	
	IN-85-458-001 (WE 50700)*	
	PH-85-040-001 (WE 50600)*	
	IN-85-767-003 (WE 50700)*	
	NS-85-001-001 (WE 50700)*	
	IN-86-019-001 (WE 50700)*	

*Data base subcategory as shown in 9/26/86 printout.
NOTE: Initial report transmitted 9/15/86.

Welding WP-09-SQN, R1 (Final)	IN-85-406-002 (QA 80206)*	Weld Inspection Criteria Used for SQN Construction
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*Concern IN-85-406-002 and Element QA 80206 added after 9/26/86 printout.
NOTE: Initial report transmitted 9/3/86.

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