VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW
TABLE OF CONTENTS

1.0 INTRODUCTION

2.0 EXECUTIVE SUMMARY

3.0 ENGINEERING REPORT

4.0 CONSTRUCTION REPORT

5.0 OPERATIONS REPORT

6.0 FIGURES

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

1.0 INTRODUCTION

VOLUME 2
TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

1.0 INTRODUCTION

During the course of TVA's construction and operation of its nuclear plants, a number of adverse conditions involving welding have been identified. These conditions were identified by quality indicators such as nonconformance reports, audit findings, NRC inspections, etc. These conditions were evaluated and dispositioned in accordance with applicable procedures.

Recently, a number of specific and general allegations/concerns were made regarding the adequacy of TVA's welding program (e.g., reinspection of welds through carbozinc primer, adequacy of G29-C welder recertification, welding filler material control, etc.). In a letter dated October 29, 1985, the NRC requested a meeting with TVA to discuss welding concerns and supplied a listing of correspondence on TVA welding issues with a number of questions and comments. In addition, the Employee Concern Program instituted at Watts Bar brought out additional questions from TVA employees relative to the adequacy of TVA's performance of welding activities.

After assessing the above issues, TVA concluded that additional investigations, reviews, possible reinspections and changes were needed to assure the adequacy of the overall TVA welding program and

the fitness for service of TVA weldments. To accomplish this, a Power and Engineering (Nuclear) Welding Project was formed to thoroughly review the welding program, resolve these issues, and take the actions necessary to ensure that future welding activities are in accordance with TVA commitments. Volume I, submitted to the NRC on January 17, 1986, defines the overall program to be accomplished by the Welding Project.

Phase I of the Welding Project's scope of work for Sequoyah Nuclear Plant was to determine if TVA's Welding Program correctly reflects TVA commitments and regulatory requirements, and to identify and categorize concerns/deficiencies in the program. The scope was to verify, using auditing techniques, (1) that the Office of Engineering (OE), Office of Construction (OC), and Nuclear Operations (NO) procedural welding programs reflect licensing commitments; (2) identify and categorize welding-related quality indicators pertaining to Sequoyah Nuclear Plant; and (3) analyze the effect of these quality indicators on the existing welding program and completed weldments for SQN.

To accomplish these tasks, the Welding Project has been receiving input from all TVA initiated actions (which are discussed in detail below) involving both TVA personnel and outside consultants such as Bechtel, Quality Technology Corporation (QTC), the Nuclear Safety Review Staff (NSRS), and has been evaluating the overall welding program from definition through implementation. Although Watts Bar (WBN) is a construction site separate from Sequoyah, it was possible that some concerns from WBN could have generic implications to

Sequoyah's operation. Therefore, to be thorough and to assure ourselves that all relevant issues were included, the generic findings of the WBN Employee Concerns Program were considered in our review of Sequoyah.

This report addresses the WP Phase I activities and accomplishments in relation to Sequoyah. The Welding Project will initiate any necessary corrective action due to program deficiencies or program enhancements which are needed and assure implementation.

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

2.0 EXECUTIVE SUMMARY

VOLUME 2

TVA WELDING PROJECT

SEQUOYAH PHASE I REVIEW

2.0 EXECUTIVE SUMMARY

2.1 PURPOSE AND SCOPE

The purpose of this report is to present the TVA Welding Project (WP) Phase I review of Sequoyah Nuclear Plant (SQN), including a comparative analysis of the AWS D1.1 Code to TVA's Construction Specification G-29-C.

2.2 FINDINGS AND IMPLICATIONS

To determine if TVA commitments and requirements were met, a review of procedures and design output documents was performed by the Welding Project on the OE, OC, and NO programs. In addition, the Welding Project (WP) considered Employee Concerns and concerns expressed by others (including QTC) and reviewed the historic quality indicators (e.g., Nonconformance Reports, audit findings, NRC reports, etc.) in relation to the Welding Program.

Our findings are:

1. Although the results show inconsistencies in the methods of transmittal of information, the engineering work of the Office of Engineering (OE) was conducted under the auspices

of a valid 10CFR50 Appendix B program and the output documents (drawings and specifications) produced under that program properly reflect welding-related commitments to the user organizations with the exception discussed in this summary. For details of the evaluation see Section 3.

2. As a result of the review conducted and presented later in Section 4 of this report, the WP has determined that Sequoyah was constructed in accordance with a functioning welding quality assurance program. Deficiencies were documented when they were identified and were corrected in accordance with applicable controlling documents. The review of program commitments and quality indicators indicates that weldments were repaired as problems were identified. However, the results of the independent audit of program implementation by Bechtel and the reinspection of hardware by the WP will be assessed in the final determination of the fitness for service of weldments at Sequoyah as part of Phase II.

The QC site-level implementing procedures for Sequoyah were reviewed to determine if the key elements from the licensing, regulatory, and design documents were included. The review of the site-level QC implementing procedures indicated that they addressed the essential elements and complied with the applicable codes, standards, and commitments in effect during the post October 1974 era (discussed in the following paragraph) These essential elements include the eighteen

criteria from 10 CFR 50, Appendix B, and the additional requirements of the then-existing, upper-tier Quality Assurance program (e.g., the interdivisional quality assurance procedures, Division of Construction Quality Assurance Procedures, etc.).

Review of the welding program in effect during construction phase activities identified two eras related to program implementation. One era is the time period from the start of construction to October 15, 1974, the other era is from this date until the licensing of Unit 2. The significance of this delineation involves NRC identification of a Quality Assurance program breakdown prior to October 15, 1974. A work stoppage was established at that time to fully identify problems and address corrective action. The stop work was lifted in stages over the next month and the new program was put in place. Structural welds stop work, except for seismic supports and conduit supports, and repair work on Class B, C, and D piping was lifted on November 11, 1974; stop work on all piping systems, except the reactor coolant system, and all of the ice condenser was lifted on November 13, 1974; seismic and pipe conduit supports stop work was lifted on November 14, 1974; and all remaining welding work was resumed on November 15, 1974, due to a NRC review on November 14, 1974. Correction of these programmatic deficiencies was under the direct purview of the Office of Engineering Design and Construction (OEDC) Quality Assurance Staff and reviewed by the NRC. Subsequent procedure revision, inspection,

repair, and documentation were in accordance with the revised quality assurance program. Due to the acceptable resolution of these problems, welding accomplished prior to October 1974 is considered to be acceptable. As a result, the scope of the WP commitment compliance review was limited to the time period after October 1974.

The review of the quality indicators reveals that problems were being identified, documented, and corrected (including in-place weld corrections). This deomonstrates that a QA program was in-place.

Two areas of structural welding concerns which could have impacted SQN were identified by the Employee Concerns Program at WBN. These involve (1) inspection of welds through Carbozinc primer and (2) welding inspections performed by the welder's foreman which would be contrary to ANSI N45.2.5. The procedures governing these were not issued until after construction was completed and after licensing of both units at SQN. Therefore, these concerns were determined to be not applicable to SQN construction. NO requires that postweld examinations be performed prior to painting. If a weld has been inadvertently painted prior to inspection, the NO procedures require that the paint be removed. The Employee Concerns that the welding inspections are performed by the welder's foreman which would be contrary to ANSI N45.2.5 is part of a structural welding issue that is addressed in the NO report (see Section 5).

3. The Welding Project has reviewed the Welding Program as it exists today for the operations and maintenance of SQN. The applicable procedures and instructions were reviewed to ensure conformance to source document requirements. Programmatic requirements were found to be addressed in procedures and instructions and the operating program has met commitments in all areas except Construction Specification G-29-C specifically as it pertains to preweld inspection as follows.

Four procedural deficiencies were identified and are being tracked and corrected through currently established corrective action programs. One of the deficiencies is the corporate QA Manual failure to require verification of contractor welder qualification prior to work on site. This is a minor procedural deficiency only, as the site does verify contractor welder qualification prior to work on site. The NQAM procedure is being revised and this deficiency does not have an impact on the safe operation of SQN and does not require any reinspections.

The other three (3) deficiencies concern the failure to address TVA Topical Report commitments to Regulatory Guide 1.94, Rev. 1 (endorses ANSI N45.2.5 - 1974). Specifically, this requires that preweld fitup inspections of structural (AWS) welds be performed by certified personnel at suitable intervals. These deficiencies have raised questions about

structural welding requirements and how they are implemented at the plant. During discussions with plant personnel, it was stated that in actual practice qualified QC inspectors perform preweld inspections in accordance with approved site procedures when inspection is required by either engineering drawings or work instructions.

However, fitup inspections are rarely, if ever, delineated on structural design drawings. Also, some confusion exists as to whether or not specifying fitup inspections is the designer's responsibility or the user organization's responsibility. This responsibility will be clarified.

In addition, nine (9) areas of improvement of programmatic procedures and seven (7) major areas of improvement of technical procedures were identified, none of which are considered to be conditions adverse to quality. These items are being forwarded as procedure enhancement to responsible organizations for coordination and revision of the appropriate procedures.

2.3 RECOMMENDATIONS

The results of Phase I indicate a need for the following actions to enhance/improve the welding program.

1. Indoctrinate and provide ongoing training/orientation to engineers, designers, technical supervisors, and engineering

managers in the following areas:

a. code applicability

b. requirements for constructability of welded designs

c. contents and use of G-29

d. logical presentation of information in output documents

e. design requirements embodied in welding codes

f. responsibility of OE to provide fabrication, erection and examination requirements

2. Revise G-29 to make it easier to follow and understand - user friendly.

3. Establish site specific communication link to obtain feedback from the user on OE output documents. Prepare additional drawings/specifications/instructions or revise existing documents as necessary to meet user organization needs in the area of welding and NDE.

4. Issue all site specific welding related output documents through the OE engineering project manager for each plant.

5. Upon completion of Phase II evaluate the need for OE to review and approve user organization implementing documents to determine that the design intent is correctly delineated in user documents.

6. Perform a corporate review of ANSI N45.2 series standards and

the level of TVA commitment for more consistency and understanding. Revise the FSAR as appropriate to more clearly describe the TVA position.

7. Use all of the above with output of Phase II for root cause evaluation, because of the potential of these program implementation weaknesses to have caused user organization implementation problems.

8. Establish a formal training program within Nuclear Operations which emphasizes the need and reasons for maintaining welder qualification records, preparation of work instructions, selection of proper welding and non-destructive examination procedures, and preparation of Notice of Indication (NOI) forms.

9. Provide clarification to personnel in the preparation of welding-related CARs/DRs with regard to documenting "Corrective Action" statements which assess service suitability of hardware when the nonconforming condition potentially affects the hardware. "Actions Taken to Prevent Recurrence" statements should require documented training or corrective instructions for personnel when this action is warranted.

10. Recordkeeping - Welder qualifications/continuity and weld data sheets within Nuclear Operations should be computerized to provide quicker and more complete access to data.

11. Assure that Nuclear Operations' and OE's procedural deficiencies are resolved through appropriate corrective action. Assure that appropriate programmatic and technical procedures are revised to resolve the areas of improvement identified.

12. Clarify the responsibility for invoking the inspection requirements of ANSI N45.2.5 and establish documented criteria for determining the applicability of these requirements to construction and modifications work. Prepare new/revised design out ut documents, procedures, or instructions to implement these criteria.

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

3.0 ENGINEERING REPORT

VOLUME 2
TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

3.0 ENGINEERING REPORT

TABLE OF CONTENTS

List of Abbreviations and Acronyms

1.0 Purpose/Scope

2.0 Action Plan

3.0 Methods of Investigation

4.0 Results of Investigations

5.0 Conclusions and Recommendations

6.0 Attachments

A. Welding Project Phase I Steps 1 and 2 Office of Engineering Work Plan (previously submitted)

B. AWS D1.1 to G-29C Comparison

C. Employee Concerns Evaluation and Classification

D. Matrix of OE Welding Commitments for Sequoyah

E. Design Process Block Diagram

F. Welding and NDE Procedure Specification Adequacy

G. Structural Welding AISC-AWS

H. Mechanical Welding ASME-ANSI-SMACNA

LIST OF ABBREVIATIONS AND ACRONYMS

AISC	American Institute of Steel Construction
ANS	American Nuclear Safety
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
CAR	Corrective Action Report
CSM	Codes, Standards & Materials Group
DQA	Division of Quality Assurance
DR	Discrepancy Report
ECN	Engineering Change Notice
FSAR	Final Safety Analysis Report
GDC	General Design Criterion
I&C	Instrumentation & Control
MSS	Manufacturers Standardization Society
NCR	Nonconformance Report
NDE	Non-Destructive Examination
NO	Nuclear Operations
OC	Office of Construction
OE	Office of Engineering
OEPs	Office of Engineering Procedures
QA	Quality Assurance
SMACNA	Sheet Metal and Air Conditioning Contractors National Assoc.
SQN	Sequoyah Nuclear Plant
VWAC	Visual Weld Acceptance Criteria
WP	Welding Project

TVA WELDING PROJECT

SEQUOYAH PHASE I REVIEW

3.0 ENGINEERING REPORT

1.0 PURPOSE/SCOPE

The purpose of this Phase I activity was to determine that OE's output documents (drawings and specifications) properly reflect welding related commitments/requirements to the user organization, evaluate welding related Employee Concerns and Quality Indicators for possible programmatic deficiencies/enhancements and initiate changes as appropriate.

2.0 ACTION PLAN

OE action steps for SQN Phase I consisted of the following:

1. Reviewing the FSAR to determine the welding related commitments.
2. Determining that welding related commitments are reflected in design output documents.
3. Assemble quality indicators of welding concerns by type.
4. Reviewing the employee welding related concerns and other welding related quality indicators for indications of programmatic deficiencies.

5. Determining the adequacy of the OE program, as related to welding, to produce output that correctly reflects commitments.

3.0 METHODS OF INVESTIGATION

A plan was developed to accomplish each of the action steps listed in Section 2.0.

Step 1 - The FSAR (including licensing commitments not reflected in the FSAR) was reviewed as described in Attachment A to determine the commitments related to welding that must be satisfied by OE.

Step 2 - Using the plan given in Attachment A, a review of OE output documents was performed to determine if commitments related to welding are properly reflected in the output documents. An auditing type technique was used to verify that mechanical and civil scope commitments had been correctly incorporated into the design output documents. A review of quality related commitments for control of special processes and the most frequently used welding and NDE procedures of General Construction Specification G-29, "Process Specifications for Welding, Heat Treatment, Nondestructive Examination, and Allied Field Fabrication Operations," was performed to verify compliance with the codes and specifications listed in the statements of intended scope of G-29. A TVA position paper on AWS D1.1 vs. G-29C was developed and is included as Attachment B.

Steps 3 & 4 - A review of employee concerns, OE generated nonconformances and QC nonconformances, dispositioned by OE, was made to determine if indications of programmatic deficiencies existed. Attachment C provides a description of how employee concerns were considered. Each employee concern was evaluated to each of the 18 criterion of 10CFR50 Appendix B to determine all possible implications or that the concern is not applicable to the program (i.e. outside the scope of the 10CFR50 Appendix B Program). Enclosure B discusses how other quality indicators were considered.

Step 5 - Using the results of steps 1-4, a determination of the adequacy of the QE program was made along with recommended improvements.

4.0 RESULTS OF THE INVESTIGATIONS

The results of the investigations are given below:

Step 1 - A review of the FSAR (including licensing commitments not reflected in the FSAR) showed that QE is committed to a number of national codes, standards, specifications, and federal regulations. Attachment D shows these commitments. Attachment E is a block diagram depicting the design process as it relates to identifying and specifying welding related requirements to the user (constructing) organization and the interrelationships of the written program governing quality.

Step 2 - The results of the plan (described in Attachment A) give a high confidence that welding related commitments are properly reflected in the design output documents. Attachment F shows the results of the review of the 25 most used procedures of G-29. One minor discrepancy was identified. Attachment G shows the buildings with the types of items reviewed, flow chart of welding codes and procedures, and the results for AISC-AWS structural welding. One Hundred (100) separate items were reviewed. Attachment H shows the systems reviewed, flow chart of welding codes and procedures, and the results for ANSI-ASME-SMACNA mechanical welding. Nineteen (19) systems consisting of 73 items were reviewed. All items were consistent with the commitments for both the AISC-AWS and ANSI-ASME-SMACNA items. Some suggestions for improvement were identified and noted on the Commitment Consistency Review Form or on Attachment B to the form. This information was consistent in reaching the conclusions/recommendations of this report.

Although the results reflect that the commitments are properly delineated, the review of the output documents indicates a need for the design requirements to be shown in a less cumbersome and more direct manner. The output documents are not always clear and precise in reflecting welding related requirements that the user organization must implement.

Steps 3 & 4 - The results of the review of employee concerns, OE NCRs, and QC NCRs dispositioned by OE did not show indications of any OE program deficiencies. Evaluation of the 444 Employee Concerns indicated no program deficiencies. Each Employee Concern was considered to be true and accurate and could be placed in more than one deficiency category. Three Hundred and Thirty-One (331) of the 444 concerns were categorized as being related to the QA program. On that basis it was also determined that program implementation was the root cause of those concerns. The results indicate needs for improvement particularly in the areas of Instructions, Procedures and Drawings, Control of Special Processes, and to a lesser degree in Design Control, Inspections, Nonconformances, and QA Records. The results show that 25% (111) of the concerns were outside the criteria of 10CFR50 Appendix B and are not applicable to the program. The need for improved communication between OE and the user organizations was also identified to be one of the basic causes for concern. See Attachment C for method of evaluation and classification of Employee Concerns.

5.0 CONCLUSIONS AND RECOMMENDATIONS

PROGRAM ADEQUACY STATEMENT

BASED UPON A THOROUGH REVIEW OF THE WORK THAT HAS BEEN DONE FOR PHASE I, THE DESIGN PROCESS AS EMBODIED IN THE OFFICE OF ENGINEERING PROCEDURES (OEPs) AND THEIR PREDECESSORS IS PRODUCING OUTPUT DOCUMENTS THAT PROPERLY REFLECT WELDING RELATED COMMITMENTS. NO DEFICIENCIES WERE IDENTIFIED WHICH WOULD QUESTION THE QUALITY OF COMPONENTS, SYSTEMS, AND STRUCTURES EXCEPT AS NOTED BELOW.

The review does show the need for improvement in OE output documents so that the documents are more "user friendly" and present information in a more logical manner. It also shows a lack of effective communication between the design and user organizations. Both the designer and the user need a better understanding of what each is attempting to accomplish.

The extent to which the individual sections and elements of ANSI N45.2 series standards are applied is being interpreted differently by different organizations. Since applicability depends upon factors such as the nature and scope of activities to be performed and the required quality of items and services, a consistent approach needs to be developed that provides for a graded program and decisions by engineering.

The following recommendations are made as a result of the Phase I work and will be re-evaluated at the conclusion of Phase II.

1. Indoctorinate and provide ongoing training/orientation to Engineers, Designers, Technical Supervisors, and Engineering Managers in the following areas:
   a. code applicability
   b. requirements for constructability of welded designs
   c. contents and use of G-29
   d. logical presentation of information in output documents

e. design requirements embodied in welding codes

f. responsibility of OE to provide fabrication, erection and examination requirements.

2. Revise G-29 to make it easier to follow and understand - user friendly.

3. Establish site specific communication link to obtain feedback from the user on OE output documents. Prepare additional drawings/specifications/instructions or revise existing documents as necessary to meet user organization needs in the area of welding and NDE.

4. Issue all site specific welding related output documents through the OE engineering project manager for each plant.

5. Upon completion of Phase II evaluate the need for OE to review and approve user organization implementing documents to determine that the design intent is correctly delineated in user documents.

6. Perform a corporate review of ANSI N45.2 series standards and the level of TVA commitment for more consistency and understanding. Revise the FSAR as appropriate to more clearly describe the TVA position.

7. OE has received a Corrective Action Report (CAR) written by the Division of Quality Assurance (DQA) documenting concerns with implementation of ANSI N45.2.5 fitup inspection requirements. This will be evaluated and a response developed as part of Recommendation #12 of the Executive Summary.

8. Use all of the above with output of Phase II for root cause evaluation, because of the potential of these program implementation weaknesses to have caused user organization implementation problems.

WELDING PROJECT - PHASE I, STEPS 1 AND 2 - OFFICE OF ENGINEERING WORK PLAN
WELDING PROJECT VERIFICATION PROCEDURE AND DOCUMENTATION

1.0 PURPOSE AND SCOPE

This statement describes the method used to verify that welding related commitments are reflected in OE output documents. The verification process will review a large number of mechanical and a large number of civil scope commitments to provide confidence that requirements are addressed on OE output drawings and specifications.

2.0 PROCEDURE

Auditing type techniques necessary to establish a high confidence level will be applied to this work scope.

2.1 OE Phase I - Implementation Steps 1 & 2

Mechanical and civil disciplines will perform reviews within their respective areas of responsibilities. In addition, electrical commitments will be handled by the civil discipline except for I&C which will be handled by the mechanical discipline.

Establish welding-related commitments made on each plant.

2.1.1 Review each plant FSAR to identify welding commitments.

2.1.2 Determine if commitments have been incorporated into design output documents for each plant.

2.1.2.1 Identify relevant statements contained in the final safety analysis report (FSAR) and compare these with the actual design as reflected in various design documents, such as design criteria, engineering change notices (ECNs), plant specifications (G Specs), etc., and documents the results of the review/evaluation.

2.1.2.2 OE FSAR Commitment Consistency Review

a. Review the FSAR to identify statements discussing welding commitments. Verify that the design process correctly reflects commitments in output documents.

b. Using Attachment A (FSAR/Commitment Review Form), assigns a unique number to each statement identified (e.g., CEB-001); enters the number on FSAR/Commitment Review form (block 1).

c. Enters on the FSAR/Commitment Review form

(blocks 4 and 5) the statement's FSAR section or document name and page number.

d. Review the selected statements for consistency with an issued applicable design document or implementing procedure related to that plant's design.

e. Complete the FSAR/Commitment Review form blocks 2, 3, and 6 through 9 as specified below.

(2) Determine the responsible group/section, enters it on FSAR/Commitment review form (block 2) and assigns the statement to the group/section to verify the consistency with design and implementing documents.

(3) Copy design statement in its entirety.

(6) List the design documents which are the basis for the FSAR/Commitment statements and/or the design documents reviewed to determine consistency (block 6).

(7) List the person(s) who verified the consistency of the statement if other than the investigator (block 7).

(8) Determine if the FSAR/Commitment description of the design is consistent with the actual design documentation. If the FSAR/Commitment is consistent with the design documentation, mark "Design documents and FSAR/Commitment consistent." If minor inconsistencies exist (e.g., differences in nomenclature) which do not result in a misrepresentation of the design, mark "minor inconsistencies between FSAR/Commitment and Design Documents," and add under "Discussion on Findings" what the inconsistencies are. If significant inconsistencies or numerous minor inconsistencies exist, such that a misinterpretation of the design is likely, mark "FSAR/Commitment is not consistent with Design Documents," and add under "Discussion of Findings" what the inconsistencies are and implements the requirements of Office of Engineering Procedure 17 as applicable; such as the issuance of the Problem Identification Report (PIR) or Significant Condition

Report (SCR)

(9) The FSAR/Commitment Consistency Review Form (Attachment B) is to be completed by the investigator or reviewer to provide additional information and recommended program improvement. This shall be submitted when the findings of the FSAR is not consistent with design documents. It is requested to be completed when minor inconsistencies exist. It may be completed to suggest improvements when design and FSAR are consistent.

f. Review the most frequently used welding and all required NDE procedures to their related scope. Provide a listing of procedures reviewed and signature of reviewer.

g. Investigator and approver sign and date the form.

h. Assemble documentation package. Review the documentation packages to determine deficiencies/recommendations. Deficiencies/recommendations will be submitted to the Project Manager of the Welding Project for consideration and transmittal to responsible organizations. The responsible organization will be required to respond to each deficiency/recommendation.

ATTACHMENT A

_____ - FSAR/COMMITMENT CONSISTENCY REVIEW FORM (FCR-1) - 1985
Plant

(1) Design Statement No.

(2) Responsible Group/Section _____

(3) Design Statement as Presented in FSAR _____

(4) FSAR Section _____

(5) FSAR Page _____

(6) Design Documents

(7) Contact(s) _____

(8) DISPOSTION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

_____

_____

_____

_____

Coordinating Initials	Investigator	Date	Reviewer/Approver	Date

ATTACHMENT B

_____ FSAR/COMMITMENT CONSISTENCY REVIEW FORM
Plant

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

COMPARISON G29C TO D1.1

DISCUSSION

TVA is committed to and complies with AWS D1.1. G29C complies with AWS D1.1 and contains Engineering decisions permitted by the code. The FSAR was revised to make this point clear.

The provisions of AWS D1.1 allow many deviations, subject to the approval of the Engineer, who is defined in AWS D1.1 as the duly designated person who acts for and in behalf of the Owner on all matters within the scope of this code.

AWS D1.1 is a fabrication code which is used in conjunction with complementary design codes or specifications. The most common structural design specifications used at nuclear power plants is the American Institute of Steel Construction's (AISC's) "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings."

The AISC specification provides some rules regarding welding, but refers to the AWS D1.1 Code for Welding Procedures, Qualifications and Other Requirements. AWS D1.1 addresses many subjects, which are discussed later, and acceptance criteria for the completed welds which are checked by Inspectors. Further, the AISC Quality Criteria Document, "Quality Criteria and Inspection Standards" is often used as a supplement to the AISC specification to provide practical and acceptable guidance on the use of the AISC specification and AWS D1.1. It allows exceptions to some of the provisions of AWS D1.1; e.g., the quality criteria documents states:

> "The human element is involved in all phases of structural design and fabrication; therefore, it is not surprising that an unintentional deviation from a drawing or specification

can occur. Not all errors or deviations need to be altered or repaired; many could be accepted without change, with no penalty to the structure or its end use. There are times when repair work creates higher residual stresses and does more harm than good. In general, it should be the Engineer's decision whether or not the deviation is harmful to the end use of the product."

Therefore, when designing and constructing structures to the AISC specification, it is necessary for the Engineer and the Owner to define the appropriate welding acceptance criteria for the work to be performed. There are some instances where it is necessary to modify the AWS D1.1 acceptance criteria in order to be practical and meaningful for use in inspecting structures designed in accordance with the AISC specification. Modification to acceptance criteria of AWS D1.1 is permitted within the provisions of both the AISC Specification and the AWS Code.

For example, G29C provides Acceptance Criteria for visual inspection of structural welds in nuclear power plants. The development of such acceptance criteria by the Engineer[1] falls within the provisions of the AISC Specification[2] and AWS D1.1[3]. This provision is clarified in the 1985 edition of AWS D1.1. A new paragraph 1.1.1.1 has been added which states:

"1.1.1.1 The fundamental premise of the Code is to provide general stipulations adequate to cover any situation. Acceptance criteria for production welds different from those specified in the Code may be used for a particular application provided they are suitably documented by the proposer and approved by the Engineer. These alternate acceptance criteria can be based upon evaluation of suitability for service using past experience, experimental evidence or engineering analysis considering material type, service load effects, and environmental factors."

The AWS D1.1 Task Force which addressed acceptance criteria and prepared this revision to the words, as well as the D1.1 committee ballot on the change viewed the 1.1.1.1 paragraph to be a clarification, stating that which always was the case and the Owner's prerogative.

In addition, the commentary for this new paragraph reads:

> "C1.1.1.1 The workmanship criteria provided in Section 3 of the Code are based upon knowledgeable judgment of what is achievable by a qualified welder. The criteria in Section 3 should not be considered as a boundary of suitability for service. Suitability for service analysis would lead to widely varying workmanship criteria unsuitable for a structural code. Futhermore in some cases, the criteria would be more liberal than what is desirable and producible by a qualified welder. In general, the appropriate quality acceptance criteria and whether or not a deviation is harmful to the end use of the product should be the Engineer's decision. When modifications are approved, evaluation of suitability for service using modern fracture mechanics techniques, a history of satisfactory service, or experimental evidence is recognized as a suitable basis for alternate acceptance criteria for welds."

[1]The Engineer is the duly designated person who acts for and in behalf of the Owner on all matters within the scope of AWS D1.1.

[2]American Institute of Steel Construction, "Specification for Design, Fabrication and Erection of Structural Steel for Buildings."

[3]American Welding Society, "Structural Welding Code - Steel, D1.1."

The salient contrasts in the exact written word of AWS D1.1-72 and the General Construction Specification G-29 are given below. Table A summarizes salient contrasts in acceptance criteria for completed welds between G-29 and AWS D1.1. Table B summarizes salient contrasts in acceptance criteria for completed welds of G-29C and NRC-accepted NCIG-01, Rev. 2, "Visual Weld Acceptance Criteria for Structural Welding in Nuclear Power Plants."

The AWS D1.1, Structural Welding Code, contains some provisions which are mandatory. It also contains many provisions which are applicable only to prequalified welding. Prequalified welding means welding conditions and variables which do not require qualification tests. The prequalified conditions may be changed by qualification tests.

The structural welding code also assigns significant responsibility and latitude to the Engineer, in several areas including related design specifications.

In accordance with the assigned responsibility, the Engineer has provided some variations to the specifics in AWS D1.1 and has approved other specific differences which are permitted to be varied based upon qualification tests.

It is TVA's position that AWS D1.1 commitment requirements have been met even though the Engineer, in accordance with assigned responsibilities, may have approved variations and/or accepted the use of non-prequalified conditions based upon qualification test results.

Some areas in which these kinds of action occur are ordinary, and routine, for example accepting welders qualified to ASME Section IX for use on structural steel like items. These kinds of variations have occurred at numerous nuclear power plants, and have been questioned before, but have not been a barrier to licensing.

It also needs to be noted that the AWS D1.1 Code does not impose or lock in a specific code date or edition on Owners, Engineers, or Constructors. These parties may agree to use newer editions in whole or in part except where a Code edition has been specifically incorporated into regulations. (See AWS Interpretation D1-84-015.)

Therefore it is permissible to incorporate portions of newer code editions.

SECTION I

AWS D1.1-72

1.4 Definitions
The welding terms used in this Code shall be interpreted in accordance with the definitions given in the latest edition of Terms and Definitions (AWS A3.0) of the American Welding Society supplemented by Appendix I of this Code.

G-29C Process Specification O.C.1.1 (R1):

1.4 Definitions

The welding terms in this specification shall be interpreted in accordance with AWS A3.0, Terms and Definitions, and ASME Section IX, QW-490, Definitions. If differences occur, ASME Section IX, QW-490 controls.

Justification: The inclusion of ASME Section IX definitions was made to complement the inclusion of other provisions of the ASME Code into G-29C. This provides for consistent terminology on the job due to the significant amount of work which use ASME definitions. This deviation has no technical significance.

AWS D1.1

1.5 Welding Symbols
Welding symbols shall be those shown in the latest edition of Standard Welding Symbols (AWS A2.0) of the American Welding Society. Special conditions shall be fully explained by added notes or details.

G-29C Process Specification O.C.1.1 (R1):

1.5 Welding Symbols

Welding symbols those shown in AWS A2.4, Symbols for Welding and Nondestructive Examination, except as modified below:

shall mean two fillet welds of the same size S.

shall be as defined in AWS A2.4 or sections 8 and 9 for connections of tubular sections and structural shapes.

also ...

G-29C Process Specification O.C.1.1 (R1):

8.3 Structural Details

Fillet welded angular connections of structural shapes shown on drawings may be made as shown in figure 8.3. This applies only to those connections designated on OE-approved drawings with the weld all-around symbol as used in the figure. (See Figure 1 attached)

9.3 Fillet welded angular connections of tubular shapes shown on drawings used may be made as shown in figure 9.3. This

applies only to those connections designated on OE-approved drawings with the weld all-around symbol as used in the figure. (See Figure 2 attached)

Justification: These examples of the use of non-standard weld symbols are considered an aid in implementing certain TVA design details. Their use is in accord with the provisions of D1.1-72, paragraph 1.5, second sentence. Note: AWS A2.4 is the updated, current version of AWS A2.0. TVA is in compliance.

AWS D1.1-72

1.6 Safety Precautions
Safety precautions shall conform to the latest edition of ANSI Z49.1, Safety in Welding and Cutting, published by the American Welding Society.

G-29C Process Specification O.C.1.1

1.6 Safety Precautions

Safety measures should be in accordance with the TVA Occupational Health and Safety Manual.

Justification: The TVA Occupational Health and Safety Manual is considered the appropriate and necessary document for control of safety hazards (including those related to welding) on TVA construction sites.

AWS D1.1-72

Paragraphs 2.9 thru 2.14 and accompanying figures specify prequalified weld joint details for use with the manual shielded

metal-arc, submerged arc, and gas metal-arc, and flux cored arc welding processes respectively.

G-29C Process Specification O.C.1.1 (R1):

Paragraph 2.3.2 - Weld joints detailed as prequalified for shielded metal arc welding may be considered prequalified for gas metal-arc, flux cored arc, and submerged arc welding.

O.C.1.1

Paragraph 2.4.3 - Groove preparations detailed for prequalified shielded metal arc welding may be considered prequalified for gas metal arc, flux cored arc, or submerged arc welding.

Justification: Joint details prequalified for the shielded metal arc process are compatible with the gas metal arc, flux cored arc, and submerged arc welding processes.

AWS D1.1-72

3.3.1 ...The gap between parts shall normally not exceed 3/16 in. except in cases involving shapes or plates 3 in. or greater in thickness when after straightening and in assembly the gap cannot be closed sufficiently to meet this tolerance. In such cases a maximum gap of 5/16 in. is acceptable provided a sealing weld or suitable backing material is used to prevent melt-thru. If the separation is 1/16 in. or greater, the leg of the fillet weld shall be increased by the amount of the separation (emphasis added).

G-29C O.C.1.1

3.3.1 The gap between parts should not exceed 3/16-inch (4.8 mm).

If after assembly the gap cannot be closed sufficiently to meet this tolerance, a maximum gap of 5/16-inch (8.0 mm) is acceptable provided a sealing weld or suitable backing material is used to prevent melting-through. If the separation is 1/16-inch (1.6 mm) or greater, the leg of the fillet weld shall be increased by the amount of the separation.

Justification: The requirements are adequate, necessary, and appropriate acceptance criteria for work to be performed in accordance with the AISC Specification. The O.C.1.1 requirements provide for weld size which meets design requirements.

AWS D1.1-72

3.5 Dimensional Tolerances

AWS D1.1 has approximately 10 column inches of special tolerances.

O.C.1.1

3.5 Dimensional Tolerances

Dimensional tolerances of welded structures shall be in accordance with the AISC specification and OE drawings and specifications.

Justification: These requirements are necessary and appropriate acceptance criteria for work in accordance with the AISC Specification and detailed drawings. It is the Engineer's responsibility to provide tolerances.

AWS D1.1-72

3.6 Weld Profiles

D1.1-72 has approximately 7 column inches of weld profile requirements.

O.C.1.1

3.6.5 All Welds

The weld profile requirements for ASME Section III, subsection NF may be used in place of 3.6.1 through 3.6.4 above.

Justification: The criteria are appropriate for work in accordance with the AISC Specification. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, "Nuclear Power Plant Components," Subsection NF "Component Supports" is recognized in the law at Title 10 Part 50.55(a).

Subsection NF recognizes the techniques and methods of the AISC Specification for design of supports and then gives acceptance criteria for welded structures. The use of Subsection NF acceptance criteria for welds is consistent with AISC designed and fabricated structures.

AWS D1.1-72

3.6.1 The faces of fillet welds may be slightly convex, flat, or slightly concave as shown in Fig. 3.6, Details A, B, and C, with no defects such as shown in Fig. 3.6, Detail D. Except at outside corner joints, the convexity shall not exceed the value of 0.1S plus 0.03 in. where S is the actual size of the fillet weld in inches. (See Fig. 3.6, Detail C.)

G-29C Process Specification O.C.1.1 (R1)

3.6.1 Fillet Welds

The faces of fillet welds may be slightly convex, flat, or slightly concave with none of the unacceptable profiles shown in Figure 3.6.1 (p. 19 of 21).
(The figure does not limit convexity.)

Justification: Convexity and reinforcement do not reduce the load carrying capacity of the welds. The requirements are adequate and appropriate for work performed in accordance with the AISC Specification. The differences are cosmetic.

G-29C Process Specification 3.C.5.5 (R0)

Process Specification 3.C.5.5 is written to the requirements of Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants (VWAC) Revision 2. VWAC is a document prepared and issued by the Nuclear Construction Issues Group (NCIG) and has received the approval of NRC. The document received extensive review, engineering evaluation, and justification based on industry experience and comparison with documents such as Welding Research Council Bulletin 222.

TVA implements the VWAC on only those structures to which the Engineer designates the criteria are applicable for which the SAR is revised.

AWS D1.1-72

3.9 Stress-Relief Heat Treatment

The temperature of the welded assembly shall be maintained

uniformly during heating and cooling so that the temperature throughout the assembly will differ by not more than 100° F at any time. ..... After a maximum temperature of 1100° F is reached on quenched and tempered steel, or a mean temperature range between 1100 F and 1200 F is reached on other steels, the temperature of the assembly shall be held within the specified limits for one hour per inch of weld thickness.

1.C.1.2

14.2 Postweld heat treatment shall be performed in accordance with Process Specification 2.C.1.1.

2.C.1.1

During the heating period, variation in temperature through the portion of the part being heated shall be no greater than 250 F within 15-foot interval of length ..... also

Table 1 - Minimum Holding Time

1/4 In. (6.4 mm) Or Less	Over 1/4 In. (6.4 mm) through 2 In. (51 mm)	Over 2 In. (51 mm)
15 min.	1 hr/in.	2 hrs plus 15 min for each additional in. over 2 in. (51 mm)

Justification: These requirements are adequate, necessary, and appropriate criteria for work to be performed in accordance with the AISC Specification. The criteria have been included in later revisions of AWS D1.1.

AWS D1.1-72

3.10.1 (Second Sentence) Welded joints shall not be painted until after the work has been completed and accepted.

G-29C Process Specification 1.C.1.2 (R3)

15.1 (Second Sentence) Welded joints shall not be painted until after the welding has been examined and accepted.

G-29C Process Specification 3.C.5.4 (R2) dated 1/28/85

5.0 Procedure
The inspectors shall check the following items:

5.1 The weld area to be inspected is cleaned of all slag, scale, grease, paint, primer or other material detrimental to visual examination.

G-29C Process Specification 3.C.5.4 (R1) Addendum 2, Rev. 1 dated 1/23/84

Delete Paragraphs 5.2.1 and 5.2.2

G-29C Process Specification 3.C.5.4 (R1) Addendum 2 dated 8/12/83
Paragraph 5.2.1 revised to read as follows:

5.2.1 Welds made prior to November 2, 1981, which are coated with carbo-zinc primer may be visually examined for weld size, undercut, overlap, and arc strikes in accordance with this process specification without removing the primer provided:

(a) The carbo-zinc was sprayed in accordance with the applicable coating application specification.

(b) The carbo-zinc thickness is not greater than 5 mils as documented in coating inspection records and/or log books or as measured adjacent to the weld. Coating thickness measurement techniques shall be in accordance with the specification for coating application.

G-29C Process Specification 3.C.5.4 (R1) dated 3/9/83

5.2 The weld area to be inspected is cleaned of all slag, scale, grease, paint, primer, or other material detrimental to visual examination.

5.2.1 Welds made prior to November 2, 1981, which are coated with carbo-zinc primer may be visually examined in accordance with this process specification without removing the primer provided:

(a) The carbo-zinc was sprayed in accordance with the applicable coating application specification.

(b) The carbo-zinc thickness is not greater than 5 mils as documented in coating inspection records and/or log books or as measured adjacent to the weld. Coating thickness measurement techniques shall be in accordance with the specification for coating application.

5.2.2 Welds inspected for weld quality (defects other than size and location) as part of an EN DES-directed sampling program shall be inspected without primer coating unless exempted by EN DES.

G-29C Process Specification 3.C.5.4 (a) dated 1/25/82

5.2 Weld area to be inspected is cleaned of all slag, scale, grease, paint, primer, or other material detrimental to visual examination.

5.2.1 Welds made prior to November 2, 1981, which are coated with carbo-zinc primer may be visually examined in accordance with this process specification without removing the primer provided:

(a) The carbo-zinc was sprayed in accordance with the applicable coating application specification.

(b) The carbo-zinc thickness is not greater than 5 mils as documented in coating inspection records and/or log books or as measured adjacent to the weld. Coating thickness measurement techniques shall be in accordance with the specification for coating application.

5.2.2 Welds inspected for weld quality (defects other than size and location) as part of an EN DES-directed sampling program shall be inspected without primer coating unless exempted by EN DES.

Justification: Paragraphs 5.2.1 and 5.2.2 were intended to provide for reinspection of welds which may have been primer coated subsequent to the original inspection. The need for such reinspection was related to resolution of several nonconformances concerning inadequate original inspections. Because the wording of these paragraphs did not make clear that the subject was reinspection, misunderstanding of the intent resulted. The consequences of the misunderstanding are not discussed here. An exhaustive investigation of this subject is contained in a report prepared for W. F. Willis by NSRS (001 850927 051)

With respect to the intent of G-29, there is no conflict with AWS D1.1 in this area. AWS D1.1 neither requires nor prohibits reinspection of

welds after primer coating. (emphasis added)

Welds are normally inspected shortly after welding. The Watts Bar specific procedures 3.C.5.4 (a) and subsequent revisions and addenda which permitted inspection/reinspection of coated welds was applicable only to welds made prior to November 2, 1981, and only at Watts Bar Nuclear Plant. The intent was to apply only to reinspection. This provision was not applicable to new welds or welds in process. Obviously, it was not TVA's intention to permit or encourage inspection of painted welds. Similar inspection techniques have been demonstrated to the satisfaction of NRC inspection personnel at Wolf Creek. Revision 2 dated 1/28/85 deleted the subject provision entirely. Programmatically, TVA's intent was in compliance with AWS D1.1

AWS D1.1-72

4.4 Arc Strikes

Arc strikes outside of the area of permanent welds should be avoided on any base metal. Cracks or blemishes resulting from arc strikes shall be ground to a smooth contour and checked to ensure soundness.

O.C.1.1

3.7.2.5 Arc Strikes and Weld Spatter. Remove by grinding or wire brushing.

1.C.1.2

8.9 Arc strikes outside of the area of permanent welds should be avoided on any material. The areas of arc strikes shall be ground to a smooth contour and examined for defects.

G-29C Process Specification 3.C.5.4 (R2)

6.2.1.d, 6.2.2.b, 6.2.3.d, 6.2.4.c -- Random weld spatter and arc strikes are acceptable if cleaned by wire brushing.

Justification: The requirements are adequate and appropriate acceptance criteria for work performed in accordance with the AISC Specification. Any defect resulting from an arc strike and not the arc strike itself is important in AISC specification fabrication and welding. For the materials of interest, arc stikes are primarily cosmetic blemishes. Arc strikes are permissible in the NCIG-01 criteria approved by the NRC provided these are crack free. TVA prohibits cracks in other paragraphs.

AWS D1.1-72

4.9.2 All electrodes having low-hydrogen coverings conforming to AWS A5.1 shall be purchased in hermetically-sealed containers or shall be dried for at least two hours between 450 F and 500 F before they are used. Electrodes having low-hydrogen coverings conforming to AWS A5.5 shall be purchased in hermetically-sealed containers or shall be dried at least one hour at temperatures between 700 F and 800 F before being used. Electrodes shall be dried prior to use if the hermetically-sealed container shows evidence of damage. Immediately after removal from hermetically-sealed containers or from drying ovens, electrodes shall be stored in ovens held at a temperature of at least 250 F. E70XX electrodes that are not used within four hours, E80XX within

two hours, E90XX within one hour, and E100XX and E110XX within one-half hour after removal from hermetically-sealed containers or removal from a drying or storage oven shall be redried before use. Electrodes which have been wet shall not be used.

1.C.1.2

9.1.5 The maximum electrode exposure times without redrying given in 9.1.2 and 9.1.3 above may be extended to the times stated below if the test described in 9.1.6 is performed: (This paragraph does not supersede C. F. Braun specification requirements on the subject.)

Electrode	Exposure Time
A5.1-E70XX	Up to 10 Hours
A5.5-E70XX	Up to 10 Hours
E80XX	Up to 10 Hours
E90XX	Up to 5 Hours
E100XX	Up to 4 Hours
E110XX	Up to 4 Hours

9.1.6 Test to Extend Allowable Exposure Time

9.1.6.1 Each electrode classification from each electrode manufacturer shall be tested if desired to extend its maximum exposure time without redrying.

9.1.6.2 Five samples of electrodes shall be tested for moisture content:

(a) As received in the manufacturer's hermetically sealed container

(b) After exposure for the desired time to air with a moisture content at least as great as the moisture content to which

the electrodes will be exposed in use.

9.1.6.3 The moisture content of all five samples exposed to moist air shall not exceed the following:

Electrode	Exposure Time
A5.1-E70XX	0.4% By Weight
A5.5-E70XX	0.4% By Weight
E80XX	0.4% By Weight
E90XX	0.4% By Weight
E100XX	0.4% By Weight
E110XX	0.2% By Weight

9.1.6.4 Example - To increase the allowable exposure time of Arcos A5.1, E7018 electrodes to 7 hours in 85 F air at 80 percent relative humidity, the moisture content of five samples of electrodes shall be determined as received and after exposure for at least 7 hours in air with at lease 0.0212 lb/lb dry air of water. The moisture content of all 5 samples exposed to moist air must be not greater than 0.4 percent by weight.

9.1.6.5 The determinations of electrode moisture content shall be performed in accordance with section 25 of AWS Specification A5.5.

9.1.6.6 The test record shall contain the following data:

(a) Electrode manufacturer and classification
(b) Moisture content of test environment
(c) Temperature and relative humidity of environment
(d) Time of exposure to environment
(e) Electrode moisture content as received
(f) Electrode moisture content after exposure

9.1.6.7 Meteorological data for a site as presented in the Safety

Analysis Report or as gathered for cooling tower design purposes shall be used to determine the maximum moisture in the site air to which electrodes are to be exposed. Alternatively, air with a moisture content of 0.0247 lb/lb dry air may be used for all electrode exposure tests. This moisture content is based on a search of 30 years of National Climatic Center data which showed the maximum wet bulb temperature ever recorded in the Valley was 83 F at Memphis.

Justification: The requirements are adequate and appropriate for work performed in accordance with the AISC and AWS D1.1 Specifications. Later revisions of AWS D1.1 include very similar requirements.

AWS D1.1-72

4.18.1.4 The thickness of weld layers, except root and surface layers, shall not exceed 1/4 in. When the root opening of a groove weld is 1/2 in. or greater, a multiple-pass, split-layer technique shall be used. The split-layer technique shall also be used in making all multiple-pass welds when the width of the layer exceeds 5/8 in.

1.C.1.2

11.3.2 The thickness of weld layers, except root and surface layers, shall not exceed 1/4-inch. When the root opening of a groove weld is 1/2-inch or greater, a multiple-pass, split-layer technique shall be used. The split-layer technique shall also be used in making all multiple-pass welds when the width of the layer exceeds 5/8-inch; however, for flux cored welding, the bead width may extend to but not exceed twice the gas cup diameter when approved by the site welding engineering or welding quality control unit.

Justification: The requirements are adequate and appropriate for work performed in accordance with the AISC Specification. The differences between TVA and AWS D1.1 are trivial.

AWS D1.1-72

4.28.1 Studs shall be welded to steel members with automatically timed stud welding equipment connected to a suitable power source.

O.C.1.1

Concrete anchor and shear connector studs also may be welded using approved welding procedures and the shielded metal arc welding process.

Justification: The requirements are adequate and appropriate for work performed in accordance with the AISC Specification. Later revisions of AWS D1.1 include this option.

AWS D1.1-72

4.29.3 Studs on which a full 360 deg weld fillet is not obtained may, at the option of the stud-welding contractor, be repaired by adding a 3/16-in. fillet weld in place of the missing weld fillet, using the shielded metal-arc process with low-hydrogen welding electrodes in accordance with the requirements of this Code.

1.C.1.2

18.1 Studs on which a full 360 degree weld fillet is not obtained may be repaired by adding a 5/16-inch fillet by the manual shielded metal arc process and low hydrogen electrodes. Welding shall be done using 5/32- or 3/16-inch-diameter electrodes

except that smaller electrodes may be used on studs 7/16-inch or less in diameter or for out-of-position welds. The repair weld shall extend a minimum of 3/8-inch beyond each end of the area requiring repair.

Justification: The requirements are adequate and appropriate for work performed in accordance with the AISC Specification. Later revisions of AWS D1.1 include these requirements.

AWS D1.1-72

5.3.1 All welders, welding operators, and tackers to be employed under this Code shall have been qualified by tests as prescribed in Parts III, IV, and V of this Section. The Engineer, at his discretion, may accept evidence of previous qualification of the welders, welding operators, and tackers to be employed.

O.C.1.1

5.3 Welders and Welding Operators

Welders and welding operators qualified in accordance with the AWS Structural Welding Code or ASME Section IX may be employed on work in accordance with this specification. They shall be qualified using the test descriptions of Process Specifications 1.M.2.2 or 1.C.2.2.

1.C.2.2

7.0 Applicability of Process Specification 1.M.2.2 Welder Qualification

7.1 Welders qualified to test descriptions of Process Specification 1.M.2.2 with 5- or 6-inch diameter 3/4-inch wall

thickness pipe in the 2G and 5G or 6G positions by side bend tests or by radiography which meets the requirements of section 6.2 of this specification are qualified to weld with the welding process and filler metal classification used in qualification test in all positions on material from 3/16-inch to unlimited thickness on plate or pipe with 4-inch or greater diameter on single welded joints with backing or double welded joints and on fillet welds on unlimited thickness material.

Welders who qualified to Process Specification 1.M.2.2 tests which use one welding process for the root and another process for the remainder of the weld are qualified to this specification as described above for the welding process and filler metal classification used for the remainder of the test weld.

7.2 Some of the applicable test descriptions and the filler metals they qualify for are as follows:

Process Specification 1.M.2.2

Test Description	Filler Metal Qualified
SM-4-B-3-H GT-SM-6-4-C-3-H GT-SM-6-4-0-3-H	AWS A5.1 or A5.5 F1 through F4
SM-5-B-3-H GT-SM-7-5-C-3-H GT-SM-7-5-0-3-H	AWS A5.4, F5
GM(FC)-6-B-3-H GT-GM(FC)-6-6-0-3-H GM-GM(FC)-6-6-0-3-H	AWS A5.20, F6

7.3 Welders qualified to test descriptions of Process specification 1.M.2.2 in the 2G and 5G or the 6G position by bend

tests or by radiography which meets the requirements of section 6.2 of this specification are qualified to the requirements of this specification. They are qualified to weld fillet welds on unlimited thickness material with the welding process and filler metal classification used in qualification testing.

7.4 Welders qualified to test descriptions utilizing the gas metal-arc solid wire process (GM-SD) are qualified for that process using the globular or spray transfer mode only unless stated otherwise on the specific test description.

Justification: The welder qualification criteria are appropriate and adequate for work performed in accordance with the AISC Specification. Process Specification 1.M.2.2 contains requirements to qualify welders in accordance with ASME Section IX. ASME Section IX is recognized in the law at Title 10 Part 50.55(a). The welder and welding operators tests of both AWS D1.1-72 and ASME Section IX are intended to determine their ability to make sound welds. The differences between these qualifications based upon ASME compared to the AWS tests are trivial. ASME qualified tests for welders have been used on several other projects and have not been obstacles to licensing. TVA's program complies with AWS D1.1 and the Engineer's responsibility.

AWS D1.1-72

5.2 Other Procedures

Except for the procedures exempted in 5.1, joint welding procedures which are to be employed in executing work under this Code shall be previously qualified prior to use by tests as prescribed in Part II of this section to the satisfaction of the

engineer. The Engineer, at his discretion, may accept evidence of previous qualification of the joint welding procedures to be employed.

O.C.1.1

5.1.2 Welding procedures of Process Specification 1.M.1.2 meeting ASME Section IX requirements may be used to fabricate weldments in accordance with this specification.

Justification: The criteria is adequate and appropriate for work in accordance with the AISC Specification. ASME Section IX is recognized by Title 10 Part 50.55(a). Welding procedures qualified to ASME IX have previously been accepted in lieu of welding procedures qualified to AWS D1.1 and this has not proved an obstacle to licensing.

AWS D1.1-72

Section 6 - Inspection
AWS D1.1 has 1-1/2 pages of requirements.

O.C.1.1

6.0 INSPECTION

6.1 All fabrication by welding shall be performed in accordance with the requirements of this specification and the applicable OE-approved drawings.

6.2 Weldments shall be verified to be correct for the following requirements using the quality control program of 6.3 to 6.7 below: (Note: Drawings may contain additional inspection requirements. The additional requirements shall be implemented.)

Activity	Nuclear Safety Related	Other
A. Preweld		
1. Proper Material	WF	WF
2. Weld Joint Dimensions (Fitup)	WF	WF
3. Alignment	WF	WF
4. Surface Cleaniness	WF	WF
5. Qualified Welder	WF	WF
6. Proper Procedure	WF	WF
7. Proper Filler Metal	WF	WF
B. During Welding		
1. Procedure Adherence	WF	WF
C. After Welding (Section 8.6)		
1. Weld Defects	WI	WF
2. Weld Contour	WI	WF
3. Size and Location of Welds	WI	WF

Notes

WF - The welder and his foreman shall meet the requirement and shall be subject to the surveillance program of 6.3.

WI - An inspector shall verify that the requirement is met. A record is required. The record may be the inspector's unique identifying mark on the weldment, marked drawings, individual inspection records, or as required by a quality assurance program.

6.3 QC shall verify through a surveillance program that each inspector and welder's foreman is properly performing the required activities of section 6.2

6.3.1 Each foreman's and inspector's work shall be monitored through a surveillance program at least once every two weeks.

6.3.2 The surveillance program shall check work that is in progress and work that has been completed to ensure compliance with the requirements of section 6.2.

6.4 Appropriate educational programs or other corrective action shall be taken to improve the capabilities of craftsmen and inspectors not meeting the requirements of section 6.2.

6.5 At nuclear construction sites, a monthly report of the surveillance program shall be submitted to the appropriate Design Project Manager. The report shall list the plant features examined, major problems, and corrective action.

6.6 Inspectors shall be trained and qualified to levels equivalent of those of SNT-TC-1A, American Society of Nondestructive Testing Recommended Practice for Nondestructive Testing Personnel Qualification and Certification. Only Level II or III persons or Level I persons working under the direction of a Level II shall perform inspections.

6.7 Nondestructive testing and visual examination shall be performed to the requirements of section 6.7 of the AWS Structural Welding Code or to the Requirements of ASME Section III for piping supports. All nondestructive testing shall be in accordance with the written procedures of General Construction Specification G-29C or G-29M.

Justification: The requirements are adequate and appropriate acceptance criteria for work to be performed in accordance with the AISC Specification. There are Construction and Operations welding-related

quality programs which address ANSI N45.2.5, inprocess inspections.

AWS D1.1-72

8.15 Quality of Welds
AWS D1.1-72 has approximately 7 column inches of requirements.

O.C.1.1

8.6.3 Acceptance criteria for visual examination and nondestructive testing of ASME Section III, subsection NF, may be substituted for the acceptance criteria of 8.6.1 and 8.6.2.

Justification: The criteria are appropriate for work in accordance with the AISC Specification. American Society of Mechanical Engineer Boiler and Pressure Vessel Code, Section III, "Nuclear Power Plant Components," Subsection NF, "Component Supports" is recognized in the law at Title 10 Part 50.55(a).

Subsection NF recognizes the techniques and methods of the AISC Specification for design of supports and then gives acceptance criteria for welded structures. The use of subsection NF acceptance criteria for welds is consistent with AISC designed and fabricated structures.

AWS D1.1-72

8.15.1.6 Fillet welds in any single continuous weld shall be permitted to underrun the nominal fillet size required by 1/16 in.without correction provided that the undersize weld does not

exceed 10% of the length of the weld. On web-to-flange welds on girders no underrun is permitted at the ends for a length equal to twice the width of the flange.

G-29C Process Specification 3.C.5.4 (R2)

6.2.3.b A minimum permissible structural fillet weld size is 3/16-inch. Undersize of 1/16-inch is allowed for fillet welds over 3/16-inch in size.

Justification: This contrast with the AWS code applies only to welds on duct supports at Watts Bar Nuclear Plant fabricated prior to February 13, 1981. The duct supports have been shown by calculation to be structurally adequate and documented in Nonconformance Report No. 2654. The Engineer has accepted this work in compliance with AISC and AWS D1.1.

AWS D1.1-72

3.6.4 For buildings and tubular structures undercut shall be not more than 0.01 in. deep when its direction is transverse to primary tensile stress in the part that is undercut, nor more than 1/32 in. for all other situations.

G-29C Process Specification O.C.1.1 (R1)

8.6.1.5 Undercut shall not exceed 1/32-inch.

G-29C Process Specification 3.C.5.4 (R2)
Work completed prior to February 13, 1981.

6.2.1a, 6.2.3a and 6.2.4(b) -
Undercut on stressed members shall not exceed 1/32-inch in depth

except that undercut of an additional 1/32-inch (1/16-inch total depth) and 1/4-inch length, not to exceed 10 percent of the run is acceptable. All welds are to be considered in stressed members unless identified otherwise by OE.

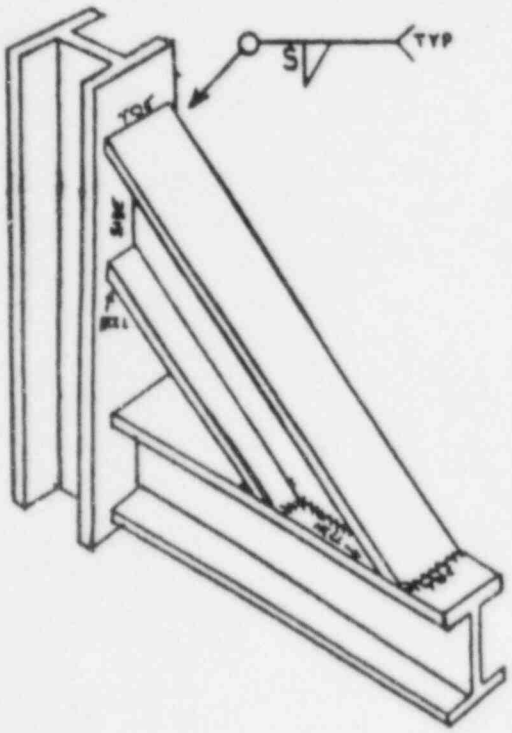
G-29C Process Specification 3.C.5.4 (R2)

Work completed after February 13, 1981.

6.1.4 Undercut shall not exceed 1/32-inch.

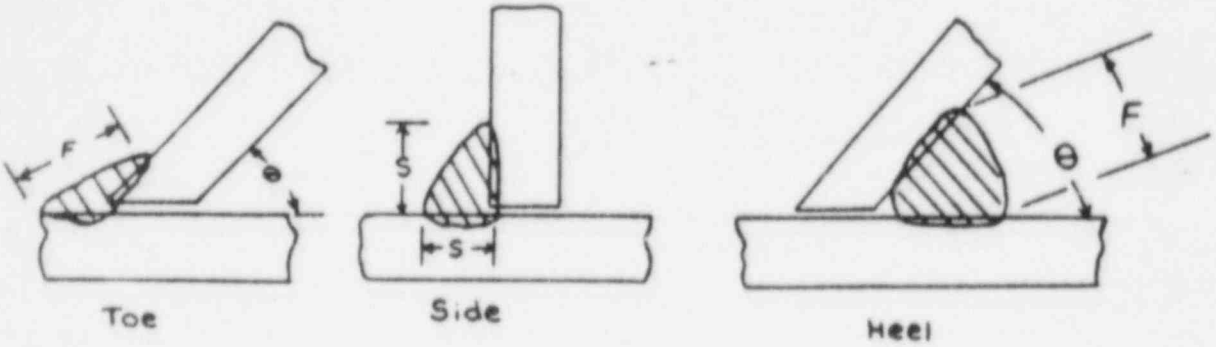
Justification: The criteria are appropriate for work in accordance with the AISC Specification. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, "Nuclear Power Plant Components," Subsection NF, "Component Supports" uses this criteria and is recognized in the law at Title 10 Part 50.55(a).

Subsection NF recognizes the techniques and methods of the AISC Specification for design of supports and then gives acceptance criteria for welded structures. The use of Subsection NF acceptance criteria for welds is consistant with AISC designed and fabricated structures. Subsection NF allows 1/32-inch deep undercut. These conditions including 1/16-inch deep undercut are also allowed by the criteria of NCIG-01 which has been approved by the NRC.



Toe Face "F" (in inches) = 2 x "S"

Fillet Size (S)	Heel Face (F) (inches) -25°-40°	40°-55°	55°-65°
3/16	1/4	1/4	5/16
1/4	1/4	5/16	3/8
5/16	5/16	5/16	7/16
3/8	3/8	3/8	1/2
7/16	3/8	7/16	9/16
1/2	3/8	1/2	5/8
9/16	3/8	9/16	11/16
5/8	7/16	9/16	3/4



Toe Side Heel

Note

1. Heel and toe welds to be centered between members to provide approximately equal contact with each.

2. Corners shall provide a smooth transition from the sides to the heel and toe.

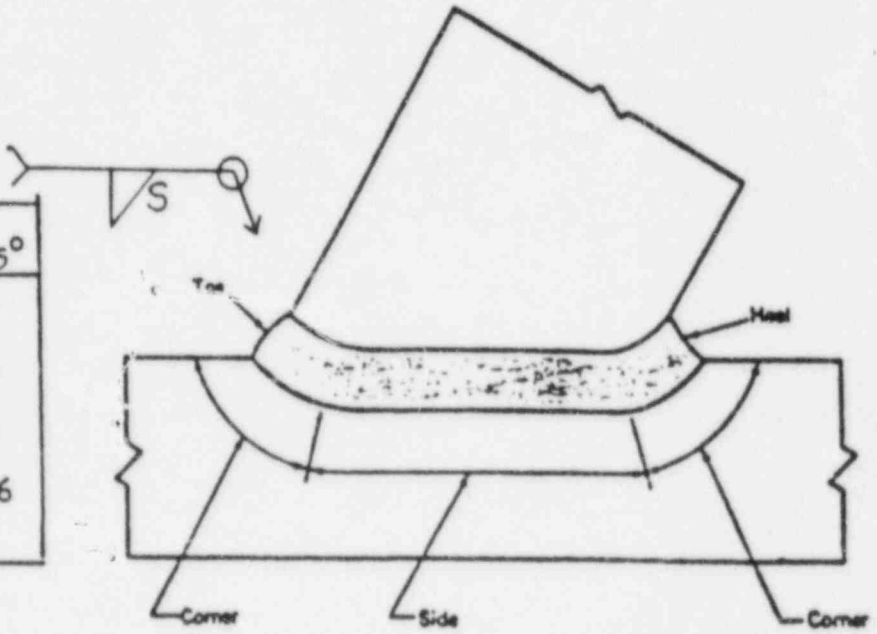
Figure 8.3 - Alternate Fillet Weld all Around Connection for Members Meeting at an Angle

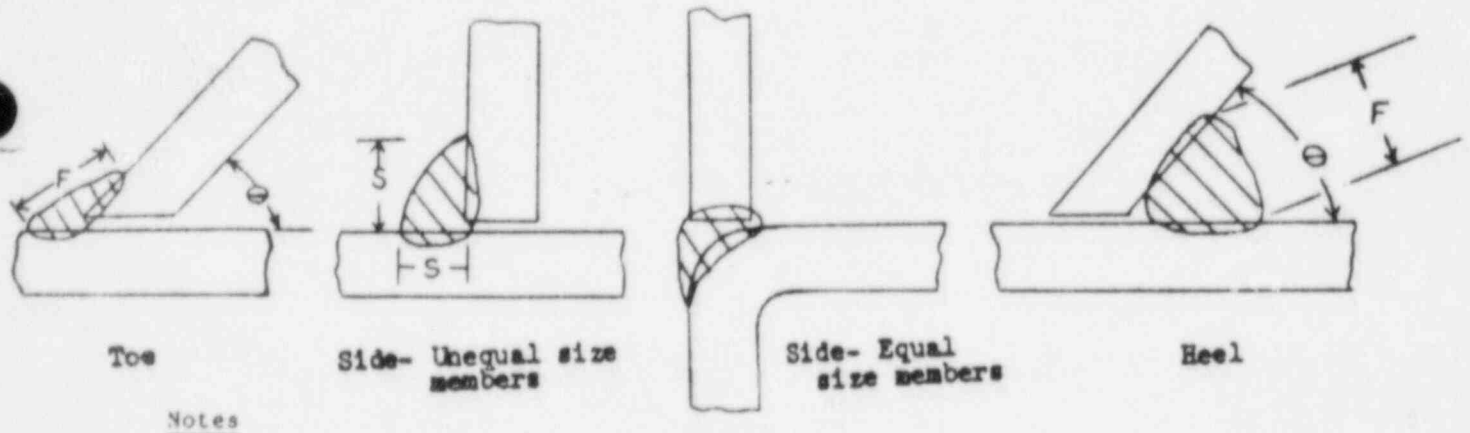
DE06:G29C
NEB12885-51

FIG. 1

Fillet Size (S)	Heel Face (F) (inches) 25°-40°	40°-55°	55°-65°
3/16	1/4	1/4	5/16
1/4	1/4	5/16	3/8
5/16	5/16	5/16	7/16
3/8	3/8	3/8	1/2
7/16	3/8	7/16	9/16
1/2	3/8	1/2	5/8
9/16	3/8	9/16	11/16
5/8	7/16	9/16	3/4

Toe Face "F" (in inches) = 2 x "S"





Toe | Side- Unequal size members | Side- Equal size members | Heel

Notes

1. Heel and toe welds to be centered between members to provide approximately equal contact with each.
2. Side welds shall be at least flush with the outer surface.
3. Corners shall provide a smooth transition from the sides to the heel and toe.

Figure 9.3 - Alternate Fillet Weld All Around Connection for Members Meeting at an Angle

FIG. 2

096020.01

TABLE A

AWS D1.1-72 COMPARISON TO TVA SPECIFICATIONS

Parameter	TVA Specification				
	P.S.3.C.5.4(R2)		P.S.3.C.5.5(R0) (VWAC)	P.S.3.C.5.2(R2)	P.S.O.C.1.1.(R1)
	Prior to 2/13/81	After 2/13/81			
Cracks	Same as AWS D1.1	Same as AWS D1.1	Same as AWS D1.1	Same as AWS	Same as AWS
Incomplete Fusion	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS	Same as AWS
Overlap	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1
Underfilled craters	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1
Undercut	Less stringent than AWS D1.1	Less stringent than AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1
Arc Strikes	Less stringent than AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1
Porosity	Same as AWS D1.1	Same as AWS D1.1	Equal to AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1
Profile	Same as AWS D1.1-81 0.1S + .06" convexity	Same as AWS D1.1-81 0.1S + .06" convexity	Less stringent than AWS D1.1	Same as AWS D1.1-81 0.1S + 0.06"	Less stringent than AWS D1.1
Leg Size	Less stringent than AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1
Reinforcement	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1
Slag	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1
Weld Length	Same as AWS D1.1	Same as AWS D1.1	Less stringent than AWS D1.1	Same as AWS D1.1	Same as AWS D1.1

096021.08

TABLE B

TVA SPECIFICATIONS COMPARED TO NCIG-01,

REVISION 2, VISUAL WELD ACCEPTANCE CRITERIA FOR STRUCTURAL WELDING AT NUCLEAR POWER PLANTS"

Parameter	TVA Specification				
	P.S.3.C.5.4(R2)		P.S.3.C.5.5(R0)	P.S.3.C.5.2(R2)	P.S.0.C.1.1.(R1)
	Prior to 2/13/81	After 2/13/81	(VWAC)		
Cracks	Same as VWAC	Same as VWAC	Same as VWAC	Same as VWAC	Same as VWAC
Incomplete Fusion	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Overlap	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Underfilled craters	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Undercut	Less stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Arc Strikes	More Stringent	More Stringent	Same as VWAC	More Stringent	Equal
Porosity	Equal	Equal	Same as VWAC	Equal	Equal
Profile	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Leg Size	Less Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Reinforcement	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Slag	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent
Weld Length	More Stringent	More Stringent	Same as VWAC	More Stringent	More Stringent

EMPLOYEE CONCERNS EVALUATION AND CLASSIFICATION

A transcript of the concerns as expressed on the K forms was used to review and classify all of the Employee Concerns that were received from NSRS as being welding related. Each concern was evaluated and classified by an eight member team of senior design and welding engineers. The experience of the team ranged from 15 years to 27 years and included experience in mechanical (piping), structural, welding, NDE, metalurgy, and inspection.

The following criteria were used to evaluate and classify the concerns:

1. Use 18 criterion of 10CFR50 Appendix B to determine all of the possible implications the concerns may have.
2. Assume that the events described in every concern are factual.
3. Consider only the programmatic implications.
4. Determine if the concern indicates a program deficiency or an implementation deficiency.
5. Evaluate the concern to each of the 18 criterion of Appendix B of 10CFR50 to determine all possible implications or that the concern is not applicable to the program.

A total of 444 employee concerns were evaluated and classified to the above criteria resulting in 1,007 separate implementation indicators. The results of the evaluation and classification process are shown in table 1.

The results indicate that there are no identified deficiencies in the program but that overall implementation of the program needs to improve particularly in the areas of Instructions, Procedures and Drawings, Control of Special Processes, and to a lesser degree in Design Control, Inspections, Nonconformances, and QA Records. The results show that 24.77% (110) of the concerns were outside the criteria of 10CFR50 Appendix B and are not applicable to the program. An independent review by QA representatives of QC and QE classified 108 of the concerns as being outside the scope of the 10CFR50 Appendix B program.

TABLE 1

EMPLOYEE CONCERNS CLASSIFICATION

	Number of Indicators
Program Deficiencies	0
Implementation Dificiencies	
Criterion 1 - Organization	2
2 - QA Program	331
3 - Design Control	42
4 - Procurement Document Control	0
5 - Instructions, Procedures, Drawings	316
6 - Document Control	0
7 - Control of Purchased Material, Equipment, Services	18
8 - Identification and Control of Purchased Material, Equipment, and Services	17
9 - Control of Special Processes	137
10 - Inspection	63
11 - Test Control	0
12 - Control of Measuring and Test Equipment	0
13 - Handling, Storage, and Shipping	5
14 - Inspection, Test, and Operating Status	5
15 - Nonconforming Materials, Parts, or Components	22
16 - Corrective Action	12
17 - QA Records	37
18 - Audits	0
TOTAL	1,007
Not applicable to the program	110

Attachment D

MATRIX OF OE WELDING COMMITMENTS FOR SEQUOYAH NUCLEAR PLANT

10CFR50 APP B

ASME Sec. III cl 1

ASME Sec. III cl 2

ASME Sec. III cl 3

ASME Sec. VIII Div. 1

ANSI B16.5

ANSI B16.34

ANSI B31.1

ANSI B31.5

ANSI B31.7

ANSI N45.2.5

ANSI N45.2.8

ANS N18.2 cl 1

ANS N18.2 cl 2a

ANS N18.2 cl 2b

ANS N18.2 cl 3

AISC

AWS

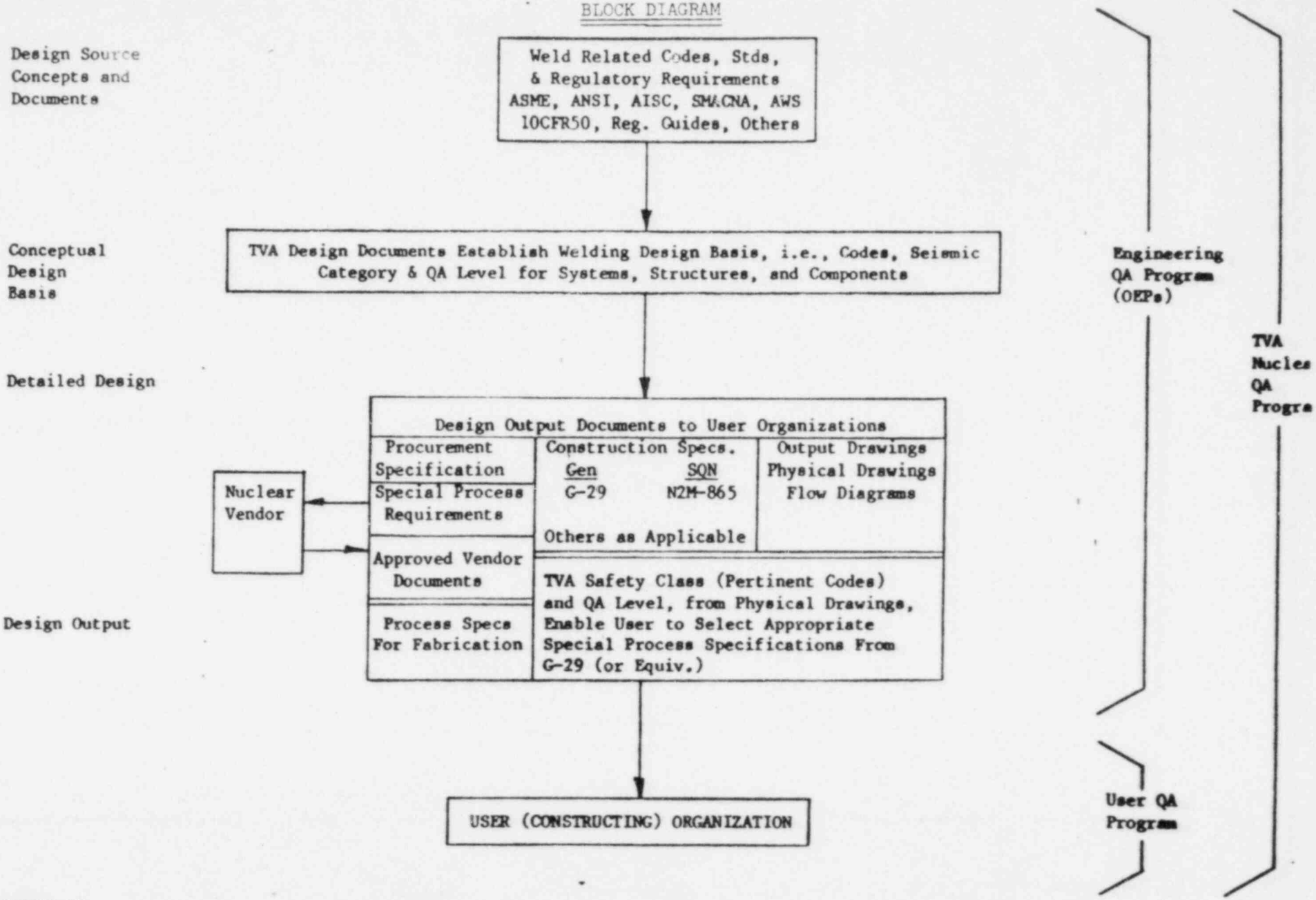
MSS-SP-66

SMACNA

ASME Sec. IX

ASME Sec. XI

DESIGN PROCESS
BLOCK DIAGRAM



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WELDING & NDE PROCEDURE SPECIFICATION ADEQUACY

Attachment F

The following process specifications for nondestructive examination or qualified welding procedures have been reviewed for compliance with the codes and standards listed in their respective statements of intended scope:

GENERAL WELDING PROCEDURE SPECIFICATION	DETAIL WELDING PROCEDURE	WELDING PROCEDURE QUALIFICATION RECORD	COMPLIES YES/NO
1.M.1.2(R4)	SM11-B-3 R7	SM11-B-9	YES
1.M.1.2(R4)	SM88-B-1 R2	SM88-B-1	YES
1.M.1.2(R4)	GT-SM11-0-3B R8	GT-SM11-0-3C	YES
1.M.1.2(R4)	GT-SM13-0-1 R0	GT-SM1-12B-0-1	YES
1.M.1.2(R4)	GT-SM18-0-1 R4	GT-SM18-0-1	YES
1.M.1.2(R4)	GT-SM88-0-1A R5	GT-SM88-0-2	YES
1.M.1.2(R4)	GT11-0-1A R7	GT11-0-1A	YES
1.M.1.2(R4)	GT18-0-1 R5	GT18-0-1	YES
1.M.1.2(R4)	GT88-0-1A R1	GT88-0-1	YES
1.M.1.2(R4)	GT43.43-0-1 R1	GT43.43-0-1	YES
1.C.1.2(R3)	SM-P-1 R9	Prequalified	YES
1.C.1.2(R3)	SM-U-1 R6	Prequalified	YES
1.C.1.2(R3)	SM-U-1B R6	Prequalified	YES
1.C.1.2(R3)	SM-U-4 R2	Prequalified	YES
1.C.1.2(R3)	GM-SD-L-1 R2	Prequalified	YES
1.C.1.2(R3)	GM-SD-U-1 R2	Prequalified	YES
1.C.1.2(R3)	GMA-FC-P-1 R3	Prequalified	YES
1.C.1.2(R3)	SA-U-1 R1	Prequalified	YES
1.C.1.2(R3)	AW-SW-P-1 R3	Prequalified	YES
1.C.1.2(R3)	GM-SD-L-1 R2	Prequalified	YES

PROCESS SPECIFICATION	TITLE	COMPLIES YES/NO
3.C.5.4(R2)	WBN Final Visual Weld Examiniation	YES[1]
3.M.1.1(R4)	Liquid Pen. Exam. Color Contrast Method	YES
3.M.5.1(R6)	Exam of Weld Ends, Fit-Up Visual & Dimen Exam of Weld Joints	YES
3.M.3.1(R3)	Radiographic Examination of Welded Joints	YES[2]
3.M.2.1(R3)	Dry Mag. Particle Exam of Welds & Weld Edge Preps.	YES

[1] Represents the TVA WNB visual weld acceptance criteria developed by Engineering as permitted by AWS D1.1.

[2] Minor deviation in that P.S.3.M.3.1 does not require the date, the seam number and manufacturer's identification to be recorded on the film. However, it has been TVA practice at CONST to include this information on the film. The procedure will be changed by 2/1/86 to reflect this requirement.

STRUCTURAL WELDING

AISC - AWS

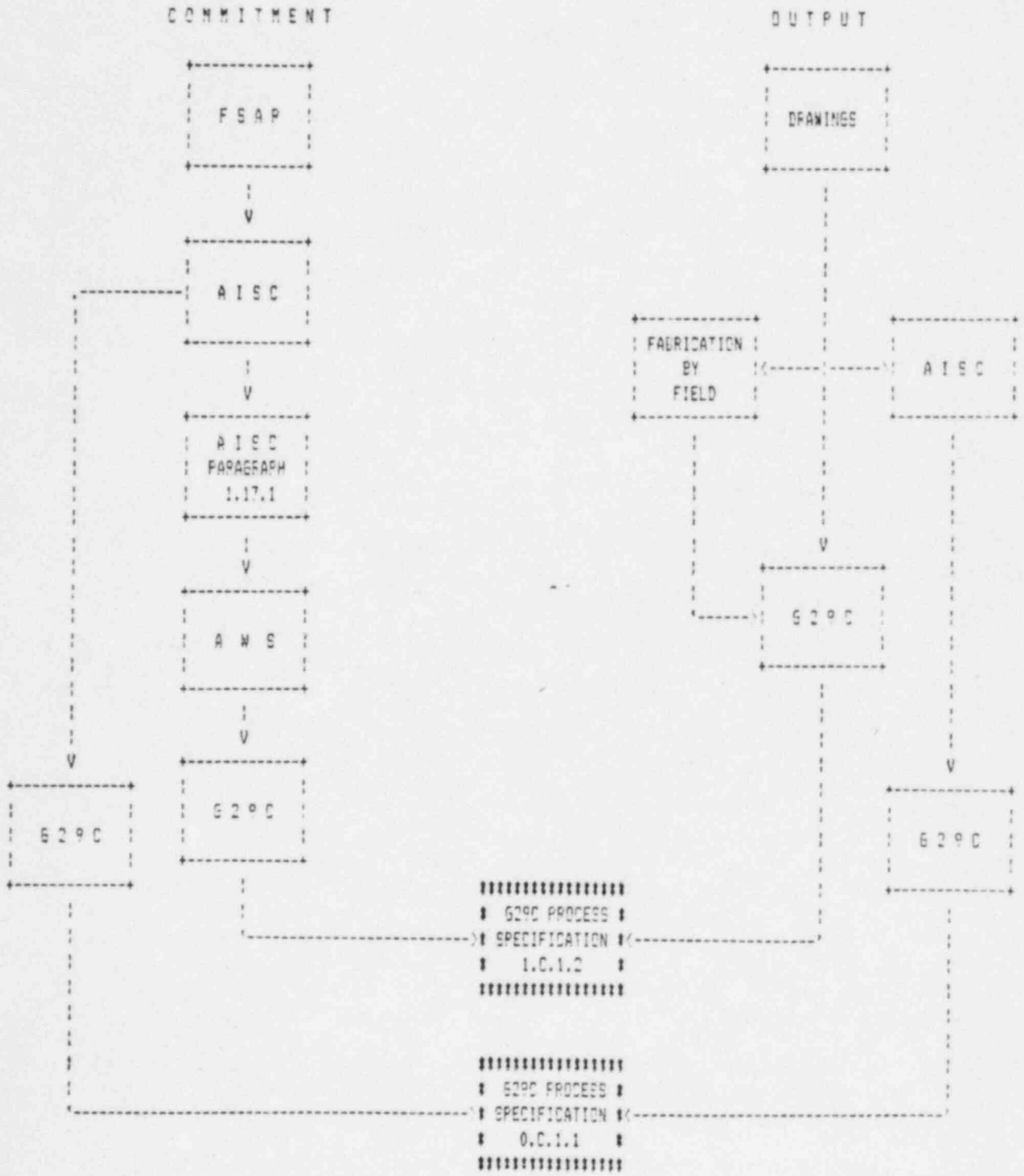
SEQUOYAH NUCLEAR PLANT

DESCRIPTION	NUMBER OF ITEMS	BUILDING	NUMBER OF ITEMS
STRUCTURAL STEEL	4	AUXILIARY	49
MISCELLANEOUS STEEL	16	REACTOR	25
PIPE SUPPORTS	49	DIESEL GEN	3
CONDUIT SUPPORTS	16	ADD DG	6
CABLE TRAY SUPPORTS	6	CONTROL	6
INSTR & CONTROL SPT	1	GENERAL	10
HVAC DUCT SUPPORTS	5	INT PMP ST	3
EQUIPMENT SUPPORTS	1	TOTAL	100
EMBEDDED PARTS	2		
TOTAL	100		

FLOW CHART

STRUCTURAL WELDING CODES AND PROCEDURES

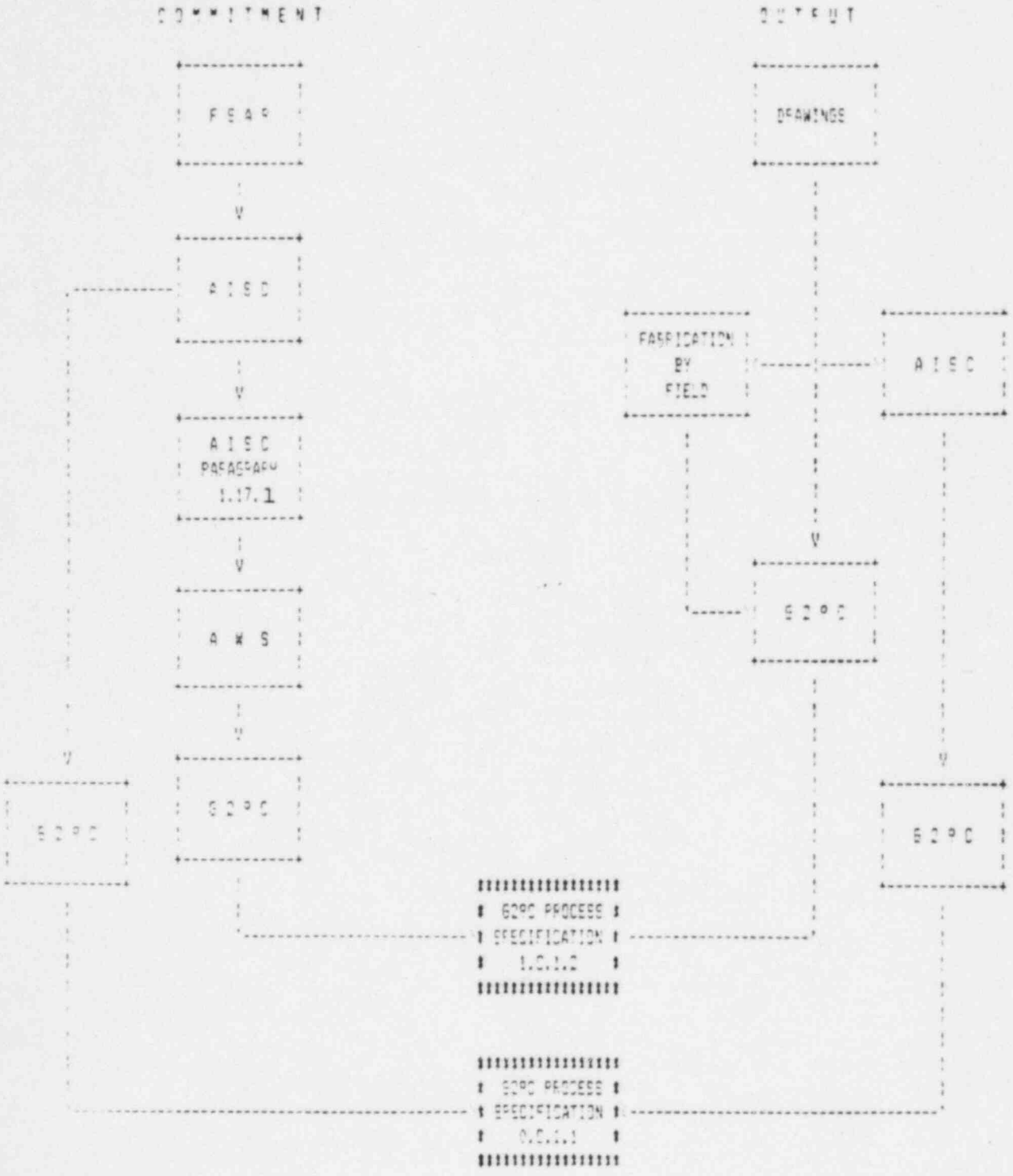
SEQUOYAH NUCLEAR PLANT



FLOW CHART

STRUCTURAL WELDING CODES AND PROCEDURES

SEQUOYAH NUCLEAR PLANT



SUMMARY OF STRUCTURAL WELDING REQUIREMENTS OUTPUT
AISC - AWS

SEQUOYAH NUCLEAR PLANT

STATUS CODE
C=CONSISTENT
M=MINOR INCONSISTENCY
I=INCONSISTENT

PLANT	NUMBER	COMMITMENT SOURCE	COMMITMENT LOCATION	APPLIC SPEC/CODE	DESCRIPTION	STATUS	BLDG
SQN	SQEFC01	FSAR	3.8.4.2	AISC/AWS	MISC STL MSVR PLATE	C	AUX
SQN	SQEFC02	FSAR	3.8.4.2	AISC/AWS	MISC STL SG PLATE	C	REACT
SQN	SQEFC07	FSAR	3.8.4.2	AISC/AWS	MISC STL AUX BLDG	C	AUX
SQN	SQEFC04	FSAR	3.8.4.2	AISC/AWS	HVAC SPT	C	AUX
SQN	SQEFC05	FSAR	3.8.4.2	AISC/AWS	CONDUIT SPT	C	CONT
SQN	SQEFC06	FSAR	3.8.4.2	AISC/AWS	MISC STL PIPE SAP	C	AUX
SQN	SQEFC07	FSAR	3.8.4.2	AISC/AWS	MISC STL SG PLATE	C	REACT
SQN	SQEFC08	FSAR	3.8.4.2	AISC/AWS	EQUIP SPT	C	AUX
SQN	SQEFC09	FSAR	3.8.3.5.1	AISC/AWS	STR STL WLKWAY	C	REACT
SQN	SQEFC10	FSAR	3.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEFC11	FSAR	3.8.4.2	AISC/AWS	MISC STL MAIN STAIR	C	AUX
SQN	SQEFC12	FSAR	3.8.4.2	AISC/AWS	MISC STL ACC PLATE	C	AUX
SQN	SQEFC13	FSAR	3.8.4.2	AISC/AWS	CABLE TRAY SPT	C	CONT
SQN	SQEFC14	FSAR	3.8.4.2	AISC/AWS	MISC STL GRILLES	C	AUX
SQN	SQEFC15	FSAR	3.8.4.2	AISC/AWS	MISC STL MSVR PLATE	C	AUX
SQN	SQEFC16	FSAR	3.8.4.2	AISC/AWS	STR STL INSP PLATE	C	REACT
SQN	SQEFC17	FSAR	3.8.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEFC18	FSAR	3.8.4.2	AISC/AWS	EMBEDDED PTS	C	CONT
SQN	SQEFC19	FSAR	3.8.4.2	AISC/AWS	CONDUIT SPT	C	CONT
SQN	SQEFC20	FSAR	3.8.4.2	AISC/AWS	CONDUIT SPT	C	CONT
SQN	SQEFC21	FSAR	3.8.4.2	AISC/AWS	MISC STL SPRAY SHLD	C	AUX
SQN	SQEFC22	FSAR	3.8.4.2	AISC/AWS	EMBEDDED PTS	C	AUX
SQN	SQEFC23	FSAR	3.8.4.2	AISC/AWS	CABLE TRAY SPT	C	AUX
SQN	SQEFC24	FSAR	3.8.4.2	AISC/AWS	MISC STL SG PLATE	C	REACT
SQN	SQEFC25	FSAR	3.8.4.2	AISC/AWS	MISC STL ACC PLATE	C	AUX

SUMMARY OF STRUCTURAL WELDING REQUIREMENTS OUTPUT
AISC - AWS

SEQUOYAH NUCLEAR PLANT

STATUS CODE
C=CONSISTENT
M=MINOR INCONSISTENCY
I=INCONSISTENT

PLANT	NUMBER	COMMITMENT SOURCE	COMMITMENT LOCATION	APPLIC SPEC/CODE	DESCRIPTION	STATUS	BLDG
SQN	SQSFC06	FSAR	T.S.4.2	AISC/AWS	MISC STL TORNADO	C	AUX
SQN	SQSFC07	FSAR	T.S.4.2	AISC/AWS	MISC STL MSVS MANIFOLD	C	AUX
SQN	SQSFC08	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	CO
SQN	SQSFC09	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	CO
SQN	SQSFC10	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC11	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC12	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC13	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC14	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC15	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC16	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC17	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC18	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC19	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC40	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC41	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC42	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQSFC43	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	CO
SQN	SQSFC44	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	ADD CO
SQN	SQSFC45	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	ADD CO
SQN	SQSFC46	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC47	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC48	FSAR	T.S.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQSFC49	FSAR	T.S.4.2	AISC/AWS	CONDUIT SPT	C	GEN
SQN	SQSFC50	FSAR	T.S.4.2	AISC/AWS	CONDUIT SPT	C	GEN

SUMMARY OF STRUCTURAL WELDING REQUIREMENTS OUTPUT
AISC - AWS

SEQUOYAH NUCLEAR PLANT

STATUS CODE
C=CONSISTENT
M=MINOR INCONSISTENCY
I=INCONSISTENT

PLANT	NUMBER	COMMITMNT SOURCE	COMMITMENT LOCATION	APPLIC SPEC/CODE	DESCRIPTION	STATUS	BLDG
SQN	SQEPC01	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC02	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC03	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC04	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC05	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC06	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC07	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC08	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	SEN
SQN	SQEPC09	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC10	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	ADD DG
SQN	SQEPC11	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC12	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC13	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	ADD DG
SQN	SQEPC14	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC15	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC16	FSAR	17.3.4.2	AISC/AWS	HVAC DUCT SPT	C	AUX
SQN	SQEPC17	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	AUX
SQN	SQEPC18	FSAR	17.3.4.2	AISC/AWS	HVAC DUCT SPT	C	AUX
SQN	SQEPC19	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC20	FSAR	17.3.4.2	AISC/AWS	CONDUIT SPT	C	AUX
SQN	SQEPC21	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC22	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC23	FSAR	17.3.4.2	AISC	PIPE SPT	C	AUX
SQN	SQEPC24	FSAR	17.3.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC25	FSAR	17.3.4.2	AISC/AWS	CABLE TRAY SPT	C	CONT

SUMMARY OF STRUCTURAL WELDING REQUIREMENTS OUTPUT
AISC - AWS

SEQUOYAH NUCLEAR PLANT

STATUS CODE
C=CONSISTENT
M=MINOR INCONSISTENCY
I=INCONSISTENT

PLANT	NUMBER	COMMITMENT SOURCE	COMMITMENT LOCATION	APPLIC SPEC/CODE	DESCRIPTION	STATUS	BLDG
SQN	SQEPC76	FSAR	17.8.3.2	AISC/AWS	HVAC DUCT SPT	C	REACT
SQN	SQEPC77	FSAR	17.8.3.2	AISC/AWS	CABLE TRAY SPT	C	REACT
SQN	SQEPC78	FSAR	17.8.4.2	AISC/AWS	CABLE TRAY SPT	C	AUX
SQN	SQEPC79	FSAR	17.8.4.2	AISC/AWS	MISC SUPPORT	C	AUX
SQN	SQEPC80	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC81	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC82	FSAR	17.8.4.2	AISC/AWS	STR STL PIPE RUP RAS	C	AUX
SQN	SQEPC83	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC84	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC85	FSAR	17.8.4.2	AISC/AWS	CABLE TRAY SPT	C	AUX
SQN	SQEPC86	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC87	FSAR	17.8.3.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC88	FSAR	17.8.4.2	AISC/AWS	HVAC DUCT SPT	C	AUX
SQN	SQEPC89	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC90	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC91	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	AUX
SQN	SQEPC92	FSAR	17.8.4.2	AISC/AWS	CONDUIT SPT	C	AUX
SQN	SQEPC93	FSAR	17.8.4.2	AISC/AWS	PIPE SPT - BOX ANCR	C	AUX
SQN	SQEPC94	FSAR	17.8.4.2	AISC/AWS	PIPE SPT - BOX ANCR	C	AUX
SQN	SQEPC95	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC96	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC97	FSAR	17.8.4.2	AISC/AWS	PIPE SPT	C	REACT
SQN	SQEPC98	FSAR	17.8.4.2	AISC/AWS	STR STL MISSILE PROT	C	TPS
SQN	SQEPC99	FSAR	17.8.4.2	AISC/AWS	MISC STL FR AND CVR	C	TPS
SQN	SQEPC100	FSAR	17.8.4.2	AISC/AWS	MISC STL TRASH SLUICE	C	TPS

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC01

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1382-1
48N1382
G29C
SQN-DC-V-1.3.3.1
N2G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

To make clear"er" specification should read "Const Spec G29C" on the dwg.

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 02

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications--AISC--AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54&55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
48N968-2
48N967

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/18/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 03

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

. 48N1352-1
Const Spec G-29C
Const Spec N2G-877

SQN-DC-V-1.3.3.1
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Reference note should read Const Spec "G29C"

N/A	David L. Wilson	12/16/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 04

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 &98

(6) Design Documents

48N1233-3 & -4
Const Spec G-29C
Const Spec N2-G-877
SQN-DC-V-1.3.3.1
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/16/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 05

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1313-1 & -11
Const Spec N2-G-877

SQN-DC-V-1.3.3.1
G29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

G29C is ref. indirectly thru N2G-877 - should have Const Spec G29C ref. directly.

N/A	David L. Wilson	12/16/85	Richard E. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 06

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

. 48W1314-6 & -7
Const Spec G29C
SQN-DC-V-1.3.3.1
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/16/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 07

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications ---AISC--AWS/G29C

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
48N908-1
48N908-3&4

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B

N/A	David L. Wilson	12/17/85	Larry A. Hatcham	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN — Plant

FSAR/COMMITMENT CONSISTENCY REVIEW FORM

SQEPC-07 DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

General notes should contain the note "All design, fabrication & erection of structural steel shall be in accordance with AISC manual."

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 08

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1231
Const Spec N2-G-877
Const Spec G-29C
SQN-DC-V-1.3.3.1
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Would be clearer to see dwg. note say "Welding to be in accordance with General Const. Spec. G-29C"

N/A	David L. Wilson	12/17/85	Richard F. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 09

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Nonpressure parts such as walkways, handrails, ladders, etc., are designed in accordance with AISC "Manual of Steel Construction," 7th Edition, so that the.....as set forth in the February 1969, AISC "Specifications for design, fabrication, and erection of structural steel for buildings."

(4) FSAR Section

3.8.2.5.1

(5) FSAR Page - 3.8-43

(6) Design Documents

48W412-2 48N401
48E955-1

Const Spec G29-C
SQN-DC-V-1.3.3.1
AISC
48N407

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
V A	David L. Wilson	12/17/85	Richard R. Stache	12/18/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 10

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A491-8-109,-110
Const Spec G-29C
SQN-DC-V-1.3.3.1
47A491-8-0A
AISC
47A491-8-0B

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Would be "clearer" to see dwg. note say "weld inspection per TVA Const Spec G29C"

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 11

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1200
48N1205

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Would be clear"er" if note read "All welding.....G29C"

Also G29C fulfills commitment to "AISC" as stated above but would be better to have note "all material and fabrication in accordance w/AISC"

N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 12

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1214
48N1209

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 13

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1305-14
48N1301-1
AISC
Const Spec N2G-877
SQN-DC-V-1.3.3.1
G29C

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Indirectly G29C has been committed to by way of Const Spec N2G-877 but it would be better to have notes directly reflecting "G29C" and "AISC"

N/A	David L. Wilson	12/17/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 14

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48W1258-7
48W1258

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 15

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1382
48N1383

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 16

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.--AISC--

AWS/G29C

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
48N401
48N407-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/17/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 17

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.--AISC--AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-2-67 & 67A
47A465-1 & 3

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

An awkward way of getting from commitment to design information consistent with commitment was used in this case. A more direct route method would have been to add a note on the 47A050-1 Ref. G29C.

N/A	David L. Wilson	12/22/85	Larry A. Katcham	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 18

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1310
SQN-DC-V-1.3.3.1
Const Spec N2G-877
G29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B for comment.

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN / Plant FSAR/COMMITMENT CONSISTENCY REVIEW FORM

SQEPC-18 DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

Design output drawing should always show clear and precise requirements stated in the FSAR.

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

Always show on "dwg notes" a direct tie to commitment in FSAR (as shown below):

(1) AISC - Design and Fabrication
(2) G29C - All Welding

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 19

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1313-1 & 2
SQN-DC-V-1.3.3.1
Const Spec N2G-877
G29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B for comment.

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN
Plant

FSAR/COMMITMENT CONSISTENCY REVIEW FORM

SQEPC-19

DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

Design output drawing should always show clear and precise requirements stated in the FSAR.

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

Always show on "dwg notes" a direct tie to commitment in FSAR (as shown below):

(1) AISC - Design and Fabrication
(2) G29C - All Welding

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 20

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1313-1 & -7
SQN-DC-V-1.3.3.1
Const Spec N2G-877
G29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B for Comment

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN
Plant

FSAR/COMMITMENT CONSISTENCY REVIEW FORM

SQEPC-20

DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

Design output drawing should always show clear and precise requirements stated in the FSAR.

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

Always show on "dwg notes" a direct tie to commitment in FSAR (as shown below):

(1) AISC - Design and Fabrication
(2) G29C - All Welding

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 21

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1314-3
SQN-DC-V-1.33.1
Const Spec N2G-877
G29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B for comment.

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN — FSAR/COMMITMENT CONSISTENCY REVIEW FORM
Plant

SQEPC-21 — DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

Design output drawing should always show clear and precise requirements stated in the FSAR.

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

Always show on "dwg notes" a direct tie to commitment in FSAR (as shown below):

(1) AISC - Design and Fabrication
(2) G29C - All Welding

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 22

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1354 & 1354-1
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 23

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1363
48N1369
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 24

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---

AWS/G29C

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
48N967

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Larry A. Katcham	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 25

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8 - 97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1209
48N1217

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 26

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

48N1705-1 & -3
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 27

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR:

Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....odes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1382
48E955-4

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 28

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....co... ...AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

17A586
17A586-2-2,-3,-6,-7,-10,-11,-14,-15
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 29

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, he design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page 3.8-97 & 98

(6) Design Documents

17A586
17A586-2-4,-8,-12, &-16
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A
Coordinating Initials

David L. Wilson
Investigator

12/19/85
Date

Richard R. Stache
Approver

12/19/85
Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 30

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-53

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Larry A. Katcham	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 31

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-55

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Larry A. Katcham	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 32

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-8-21

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/18/85	Larry A. Katcham	12/18/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 33

(2) Responsible Group/Section Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-50

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/18/85	Larry A. Katcham	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 34

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-57

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/18/85	Larry A. Hutcham	12/18/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 35

(2) Responsible Group/Section Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-29

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/17/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 36

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-60

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/17/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 37

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page 3.8-97 & 98

(6) Design Documents

47A415-2
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/18/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 38

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A415-1
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC39

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A496-5-5 & -5A
47A400-6-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/17/85	Richard R. Stache	12/19/95

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 40

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---

AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-13

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/17/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 41

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-1-13

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/17/85	Larry A. Katcham	12/17/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 42

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-2-49, A,B,C
47K465-63,62,60
47W465-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

An awkward way of getting from commitment to design info consistent with commitment was used here.

A more direct method would have been to add a note on 47W050-1 Ref. G29C.

N/A	David L. Wilson	12/22/85	Larry A. Katcham	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 43

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

17A586-2-1, -5, -9, -13
17A586
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard A. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 44

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

17A586-5-25 thru 25B
17A586
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 45

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

17A586-5-41 & 41A & 42, 42A
17A586
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 46

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....code....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A491-8-105
47A49[illegible]
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 47

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A491
47A491-6-29 & -30
SQN DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 48

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

47A491
47A491-4-114
SEQ-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 49

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-66 thru 66B
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 50

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-59 & -60
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 51

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1004 & 1004A
47A056-1005 & 1005A
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 52

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1017 & 1017A
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

~~Design Documents and FSAR Consistent~~

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 53

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1038, 1038A, 1038B
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 54

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A1045 & 1045A
47A056-1051 & 1051A
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard E. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 55

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1052 & 1052A
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 56

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1053 & 1053A, 1053B, & 1053C
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 57

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1066 & 1066A
47A056-1074 & 1074A
47A056-1151
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/19/85	Richard B. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 58

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A056-1
47A056-1055, A,B
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-877
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/18/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 59

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-2-63
1-H36-58

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

A roundabout way of getting from commitment to design instruction consistent w/commitment was used in this case. A more direct route would have been to add a note on 47A050-1 Ref. G29C.

N/A	David L. Wilson	12/22/85	Larry A. Katcham	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC60

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents
17A586
17A586-40, 40A
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

See Attachment B for comment.

N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT B

SQN / Plant FSAR/COMMITMENT CONSISTENCY REVIEW FORM

SQEPC-60 DESIGN STATEMENT NO.

INCONSISTENCY (describe)

SUGGESTION FOR IMPROVEMENT OF PROGRAM (describe)

The output dwgs. should always be tied together.

CHANGES TO MAKE PROGRAM WORK PROPERLY (describe)

Always have either

(1) Companion dwg. note
(2) "Refer to" dwg. note
(3) At section indicator's note dwg. No.

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 61

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-54 & 56

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Larry A. Katcham	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC62

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-[illegible]-1.3.3.1
Const Spec G-29C
AISC
47A465-1
47A465-2-52

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/19/85	Larry A. Katcham	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 63

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

17A586
17A586-5-44 & 44A
17A586-5-45 & 45A
SQN-DC-V-1.3.3.1
Const Spec G-29C
Const Spec N2-G-077
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 64

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

47A491
47A491-8-108
SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/19/85	Richard R. Stache	12/19/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC65

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page -3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A053-83, -118, -146, & -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC66

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A055-170, -170A, -1
47N920-8, -16

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC67

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A056-16, -16A, -16B, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC68

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents
SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A055-159, -1, -1A
47W920-8

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stachne	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 69

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
H10-1158, -1159, -1160, -1160A, & -1161
47A464-4-172, -2

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 70

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A056-148, -1, -150

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

For location: Between "A11" and "A10" at U-Line on El 714.0

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 71

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
H1[illegible]-469, -469A, -470, -481
47W[illegible]64-4, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 72

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
HERCW325,326
47W450-3
47W450-1E

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 73

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
HERCW-332,-333
47W450-3, -1E

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 74

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents
SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
HERCW329, 329A, -330
Variance
47W450-4, -1E

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 75

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1304
48N1301-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 76

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
Const Specs N2G-877
N2M-865
47W915-15
47Ao55-35, -1, -1A

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/13/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC77

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---

AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
Const Spec N2G-877
48N1506
48N1501
48N1505

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/13/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 78

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1321
48N1317

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 79

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47W600-34, -14, -6, -24

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 80

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
H10-494, -495, -496, -497, -497A
47W464-9, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents
	X	

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 81

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
H10-561, -562, -562A, -562B
-563, -564
47W464-9, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents
	X	

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC82

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 &98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48W1227-1, -2, -3

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 83

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I st ures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A[illegible]3-10, 10A, 10B, -4, -19, -1, -1A
CC-052, 49, 48, 51

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 84

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
CC-046
47A053-136, 136A, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A
Coordinating Initials

David L. Wilson
Investigator

12/26/85
Date

Richard R. Stache
Approver

12/27/85
Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC85

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
48N1322
48N1321
48N1317

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard E. Stache	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC86

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
CVCS-074, 076
47A053-16, 16A, -98, -92, -1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC87

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections of the following codes, standards, and specifications.---AISC---AWS/G29C.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54 & 55

(6) Design Documents

SQN-DC-V-1.3.3.1
Const Spec G-29C
AISC
47W450-1E, -21, -23
HERCW-8

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/13/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC88

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A055-155, -1A

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC89

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A431-7-3
47A431-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 90

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
H65-487, 488
47W431-7, -1, -12
47A431-1

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents
X		

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 91

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Specs N2M-865
N2G-877
47W920-31, -33, -28, -8, -1
47A920-28-1, -1B, -1A

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC92

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page- 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A056-34
Variance - FCR 455

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/26/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 93

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47A491-3-6
47B100-3,-3A,-3B
47W491

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

Coordinating Initials	Investigator	Date	Approver	Date
N/A	David L. Wilson	12/26/85	Richard E. Stach	12/27/85

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC94

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
47B100-1
HERCW-379, -379A, -380

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents
	X	

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 95

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections.....specs.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2M-865
HERCW-14
47W450-18, -23, -21

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/15/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 96

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections.....Specs.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2M-865
HERCW-20
47A450-1E, -23, -21

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/15/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC 97

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the interior structures are based upon the appropriate sections.....Specs.

(4) FSAR Section

3.8.3.2

(5) FSAR Page - 3.8-54

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2M-865
HERCW-3
47A450-1E, -23, -21

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	1/13/86	Richard R. Stache	1/15/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 98

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
38N215
38N216
38N217

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

(1) Design Statement No.

SQEPC 99

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
38N202

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/26/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

(1) Design Statement No.

SQEPC100

(2) Responsible Group/Section: Civil Group/Civil #3 Section

(3) Design Statement as Presented in FSAR: Unless otherwise indicated in the FSAR, the design and construction of the Category I structures other than the primary containment and interior structures are based upon appropriate ....codes....AISC....AWS/G29C

(4) FSAR Section

3.8.4.2

(5) FSAR Page - 3.8-97 & 98

(6) Design Documents

SQN-DC-V-1.3.3.1
AISC
G29C
Const Spec N2G-877
38N204

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

N/A	David L. Wilson	12/26/85	Richard R. Stache	12/27/85
Coordinating Initials	Investigator	Date	Approver	Date

MECHANICAL WELDING

ANSI - ASME - SMACNA

SEQUOYAH NUCLEAR PLANT

SYSTEM	NUMBER AUDIT PACKS
MAIN STEAM	8
AUX & MAIN FEEDWATER	11
FIRE PROTECTION	3
HVAC (VENT)	2
HVAC (AC)	5
CONTROL AIR	1
HYDROGEN SYSTEM	1
CHEM & VOL CONTROL	4
SAFETY INJECTION	7
ERCW	13
REACTOR COOLANT	8
COMPONENT COOLING	3
SPENT FUEL POOL COOL	1
UPPER HEAD INJECTION	1
CONTAINMENT SPRAY	1
FUEL OIL	1
ICE CONDENSER	1
RESIDUAL HEAT REMOVAL	1
DIESEL STARTING AIR	1
TOTAL	73

ACCEPTANCE CRITERIA FOR DESIGN REVIEW

Mechanical Design Output Document

Acceptance criteria for judging adequate delineation of the welding commitments by the design output documents for mechanical system were the identification of the TVA classification of the system and reference of the construction specification containing welding process specifications. The TVA classification identified applicable codes and standards which were to be used for fabrication and testing. The welding construction specification listed the acceptable processes for welding and NDE requirements. Construction procedures that adequately addressed all the essential elements of a welding quality assurance program and fully comply with the codes, standards, commitments, and regulatory requirements are in effect as noted in the Phase I report of both OC and NO.

L E G E N D

STAT
- C=CONSISTENT
- M=MINOR INCONSISTENCY
- I=INCONSISTENT

WELD TYPE
- BW=BUTT WELD
- SW=SOCKET WELD
- FW=FILLET WELD

SYS
- 01=MAIN STEAM
- 02=AUX & MAIN FDWTR
- 19=FUEL OIL
- 26=FIRE PROTECTION
- 30=HVAC (VENT)
- 31=HVAC (AC)
- 32=CONTROL AIR
- 33=HYDROGEN SYS
- 61=ICE CONDENSER
- 62=CVCS
- 63=SAFETY INJECTION
- 67=ERCW
- 69=REACT COOLANT
- 72=CONTAINMENT SPRAY
- 74=RESIDUAL HEAT REMOVAL
- 70=COMPONENT COOL
- 78=SPENT FUEL POOL COOL
- 82=DIESEL STARTING AIR
- 87=UPPER HEAD INJECT

SUMMARY OF MECHANICAL WELDING REQUIREMENTS OUTPUT
ANSI - ASME - SMACNA
SEQUOYAH NUCLEAR PLANT

NUMBER	ECN	YR	WELD CODE COMMITMENT	FSAR LOCATION	STAT	SYS	TVA CLS	OUTPUT WELD CODE	APPLICAT	WELD TYPE	QA	SEIS CAT	DESIGN INPUT	DESIGN OUTPUT
SQM01	L6183	85	ASME III-2	T 3.2.2-2	C	01	B	III-2	PIPE/VALV	SW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM02	L6183	85	ASME III-2	T 3.2.2-2	C	01	B	III-2	PIPE/VALV	SW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM03	L5934	84	B31.1	T 10.3.2-1	C	01	H	B31.1	STEEL FAB	FW	NONE	NONE	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM04	3005	81	B31.1	T 10.3.2-1	C	01	H	B31.1	PIPE/PIPE	BW	NONE	NONE	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM05	L5696	82	B31.1	T 10.3.2-1	C	01	H	B31.1	FITT/PIPE	SW	NONE	NONE	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM06	L5914	83	B31.1	T 10.3.2-1	C	01	H	B31.1	FITT/PIPE	SW	NONE	NONE	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM07	5773	83	ASME III-1	T 3.2.2-2	C	68	A	III-1	PIPE/FITT	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM09	5856	87	ASME III-1	T 3.2.2-2	C	68	A	III-1	FITT/PIPE	FW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM09	L6272	85	ASME III-3	T 3.2.2-2	C	03	C	III-3	PIPE/PIPE	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM10	L6005	85	ASME III-3	T 3.2.2-2	C	03	C	III-3	PIPE/VALV	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM11	L5460	83	ASME III-3	T 3.2.2-2	C	03	C	III-3	PIPE/PIPE	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM12	L5842	87	ASME III-3	T 3.2.2-2	C	03	C	III-3	PIPE/PIPE	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM13	L5647	83	B31.1	T 3.2.2-2	C	03	H	B31.1	PIPE/PIPE	BW	NONE	NONE	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM14	L5769	82	ASME III-2	T 3.2.2-2	C	03	B	III-2	PIPE/PIPE	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM15	L5699	82	ASME III-2	T 3.2.2-2	C	03	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM16	L6183	85	ASME III-2	T 3.2.2-2	C	03	B	III-2	PIPE/VALV	SW	FULL	I	FSAR,CODES PIPE DC	PHYS DWG,FD,G29M N2M-865
SQM17	L5934	84	B31.1	T 3.2.2-2	C	03	H	B31.1	STEEL FAB	FW	NONE	NONE	FSAR,CODES	PHYS DWG,FD,G29M

SUMMARY OF MECHANICAL WELDING REQUIREMENTS OUTPUT
ANSI - ASME - SMACNA
SEQUOYAH NUCLEAR PLANT

NUMBER	ECN	YR	WELD CODE COMMITMENT	FSAR LOCATION	STAT	SYS	TVA CLS	OUTPUT WELD CODE	APPLICAT	WELD TYPE	QA	SEIS CAT	DESIGN INPUT	DESIGN OUTPUT
SQM18	L5024	83	B31.1	T 3.2.2-2	C	03	H	B31.1	PIPE/FITT	BW	NONE	NONE	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM19	L5599	84	B31.1	T 3.2.2-2	C	26	G	B31.1	PIPE/FITT	BW	FULL	IL	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM20	L6001	84	B31.1	T 3.2.2-2	C	26	G	B31.1	PIPE/FITT	BW	FULL	IL	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM21	L6319	83	B31.1	T 3.2.2-2	C	26	G	B31.1	PIPE/FITT	BW	FULL	IL	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM22	L5998	84	ASME III-2	T 3.2.2-2	C	62	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM23	L5796	85	ASME III-2	T 3.2.2-2	C	62	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM24	L5456	82	ASME III-2	T 3.2.2-2	C	62	B	III-2	PIPE/FITT	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM25	L5095	82	ASME III-2	T 3.2.2-2	C	62	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM26	L5809	83	B31.1	T 3.2.2-2	C	63	G	B31.1	PIPE/VALV	BW	FULL	NONE	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM27	L5095	82	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM28	L6176	85	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM29	L6027	84	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM30	L5667	85	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM31	L5275	85	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM32	L5702	83	ASME III-2	T 3.2.2-2	C	63	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM33	L6491	85	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/FLNG	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM34	L5777	84	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/PIPE	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM35	L6067	84	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/VALV	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM36	L6429	85	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/FLNG	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM37	L6467	85	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/PLAT	FW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM38	L6429	85	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM39	L6574	85	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/PIPE	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM40	L5009	83	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/FLNG	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM41	L5777	84	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/VALV	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M

SUMMARY OF MECHANICAL WELDING REQUIREMENTS OUTPUT
ANSI - ASME - SMACNA
SEQUOYAH NUCLEAR PLANT

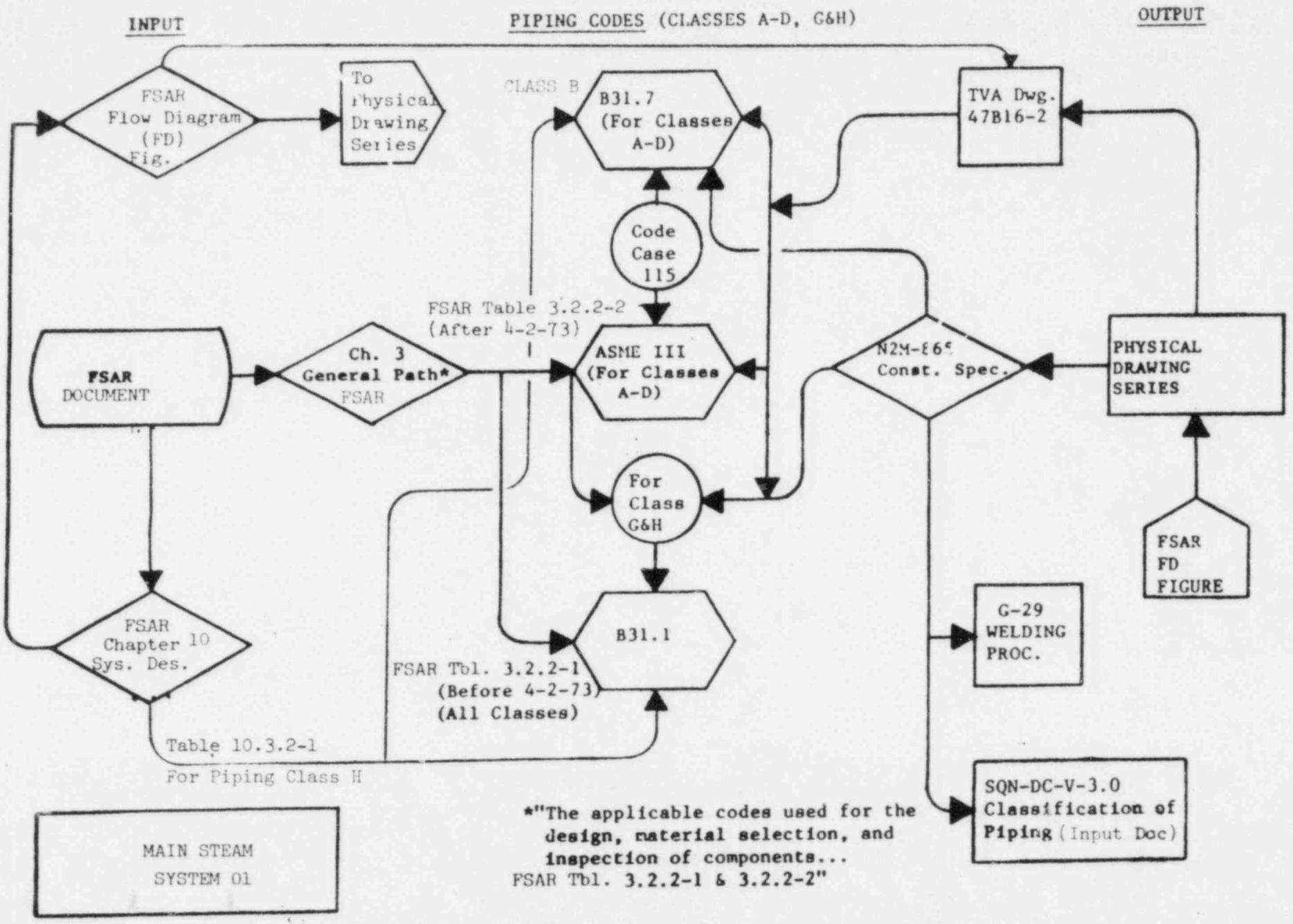
NUMBER	ECN	YR	WELD CODE COMMITMENT	FSAR LOCATION	STAT	SYS	TVA CLS	OUTPUT WELD CODE	APPLICAT	WELD TYPE	QA	SEIS CAT	DESIGN INPUT	DESIGN OUTPUT
													PIPE DC	N2M-865
SQM42	L5526	87	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/PIPE	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM43	L5555	82	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/FLNG	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM44	L5009	91	ASME III-3	9.2.2.8	C	67	C	III-3	PIPE/VALV	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM45	L5009	81	ASME III-3	9.2.2.8	C	67	C	III-3	SOCK/PIPE	FW	FULL	I	FSAR,CODES	PHY DWG,FD,G29M
													PIPE DC	N2M- 65
SQM46	L5106	84	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/FLNG	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM47	L6402	85	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/FLNG	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM48	L5106	84	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/FLNG	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM49	L5197	82	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/FLNG	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM50	L5095	92	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/VALV	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM51	2777	87	ASME III-2	T 3.2.2-2	C	68	B	III-2	PIPE/VALV	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM52	L6165	85	ASME III-2	T 3.2.2-2	C	70	B	III-2	FITTING	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM53	L5912	84	ASME III-3	T 3.2.2-2	C	70	C	III-3	PIPE/FLNG	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM54	L5200	85	ASME III-3	T 3.2.2-2	C	70	C	III-3	PIPE/FLNG	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM55	L5911	84	B31.1	T 3.2.2-3	C	78	G	B31.1	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM56	L6705	85	SMACNA	T 3.2.2-3	C	70	S	SMACNA	DUCT		FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM57	L5599	85	SMACNA	T 3.2.2-3	C	71	S	SMACNA	DUCT		FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM58	L5577	84	SMACNA	T 3.2.2-3	C	70	S	SMACNA	DUCT		FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM59	L5895	84	B31.1	T 3.2.2-3	C	71	Q	B31.1	PIPE/PIPE	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM60	L5200	85	SMACNA	T 3.2.2-3	C	71	S	SMACNA	DUCT		FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM61	2780	84	B31.1	T 3.2.2-3	C	71	Q	B31.1	PLUG/FIT	SW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM62	L5194	87	SMACNA	T 3.2.2-3	C	71	S	SMACNA	DUCT	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM63	L5200	84	ASME III-2	T 3.2.2-2	C	97	B	III-2	PIPE/PIPE	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM64	L6187	85	ASME III-2	T 3.2.2-2	C	02	B	III-2	PIPE/VALV	BW	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM65	L6275	85	B31.1	T 10.3.2-1	C	01	H	B31.1	FITT/PIPE	SW	NONE	NONE	FSAR,CODES	PHYS DWG,FD,G29M

SUMMARY OE MECHANICAL WELDING REQUIREMENTS OUTPUT
ANSI - ASME - SMACNA
SEQUOYAH NUCLEAR PLANT

NUMBER	ECN	YR	WELD CODE COMMITMENT	FSAR LOCATION	STAT	SYS	TVA CLS	OUTPUT WELD CODE	APPLICAT	WELD TYPE	QA	SEIS CAT	DESIGN INPUT	DESIGN OUTPUT
													PIPE DC	N2M-865
SQM66	L5540	82	B31.1	T 10.3.2-1	C	01	H	B31.1	FITT/PIPE	SW	NONE	NONE	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM67	NA	84	ASME III-2	T 3.2.2-2	C	35	B	III-2	NA	NA		I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM68	NA	78	ASME III-3	T 3.2.2-2	C	32	C	III-3	NA	NA		I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM69	NA	84	ASME III-2	T 3.2.2-2	C	72	B	III-2	NA	NA	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM70	NA	83	ASME III-3	T 3.2.2-2	C	18	C	III-3	NA	NA	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM71	NA	80	ASME III-2	T 3.2.2-2	C	61	B	III-2	NA	NA	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM72	NA	84	ASME III-1	T 3.2.2-2	C	74	A	III-1	NA	NA	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865
SQM73	NA	82	ASME III-3	T 3.2.2-2	C	82	C	III-3	NA	NA	FULL	I	FSAR,CODES	PHYS DWG,FD,G29M
													PIPE DC	N2M-865

SEQUOYAH NUCLEAR PLANT

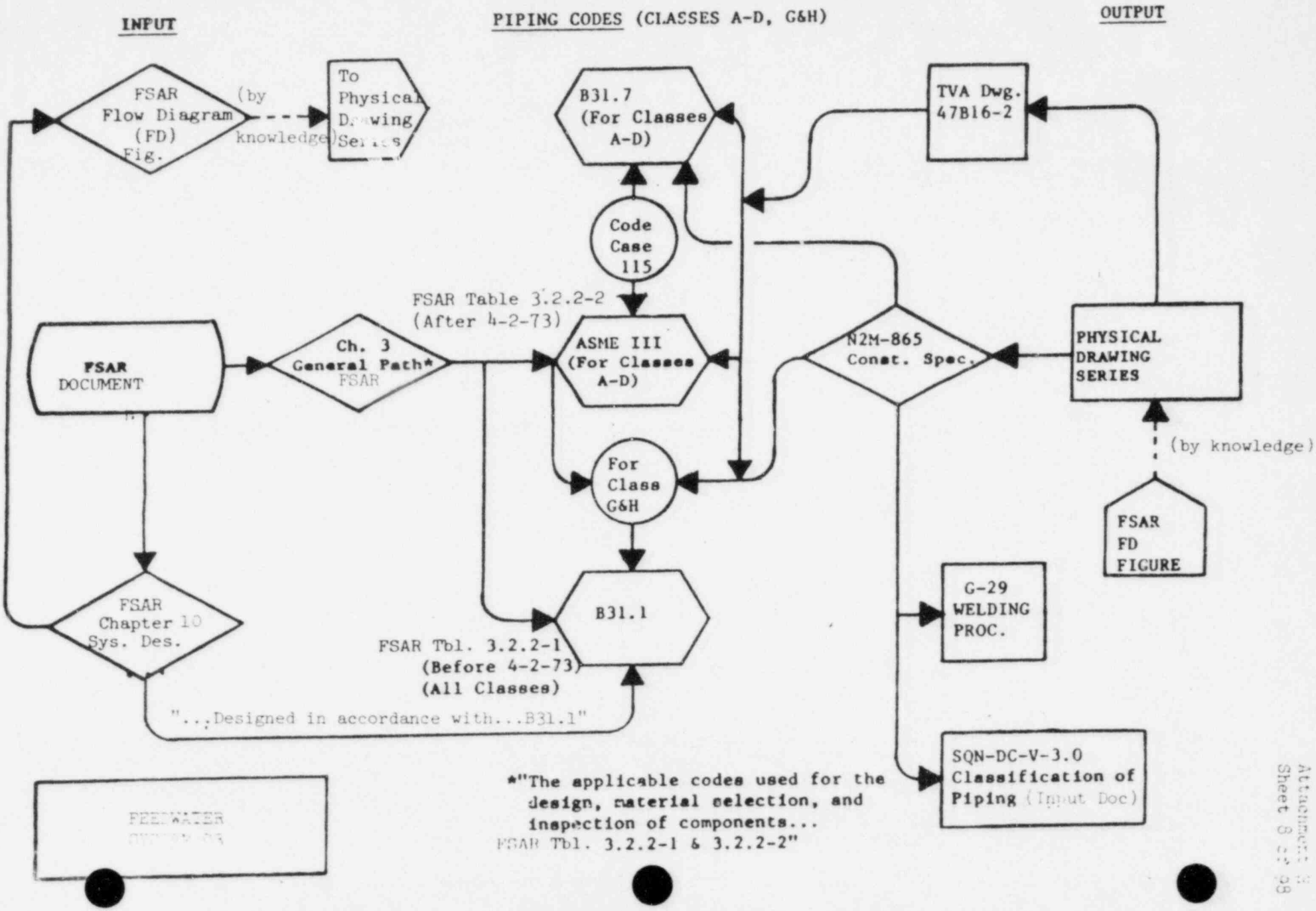
WELDING CODES AND PROCEDURES



*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

SEQUOYAH NUCLEAR PLANT

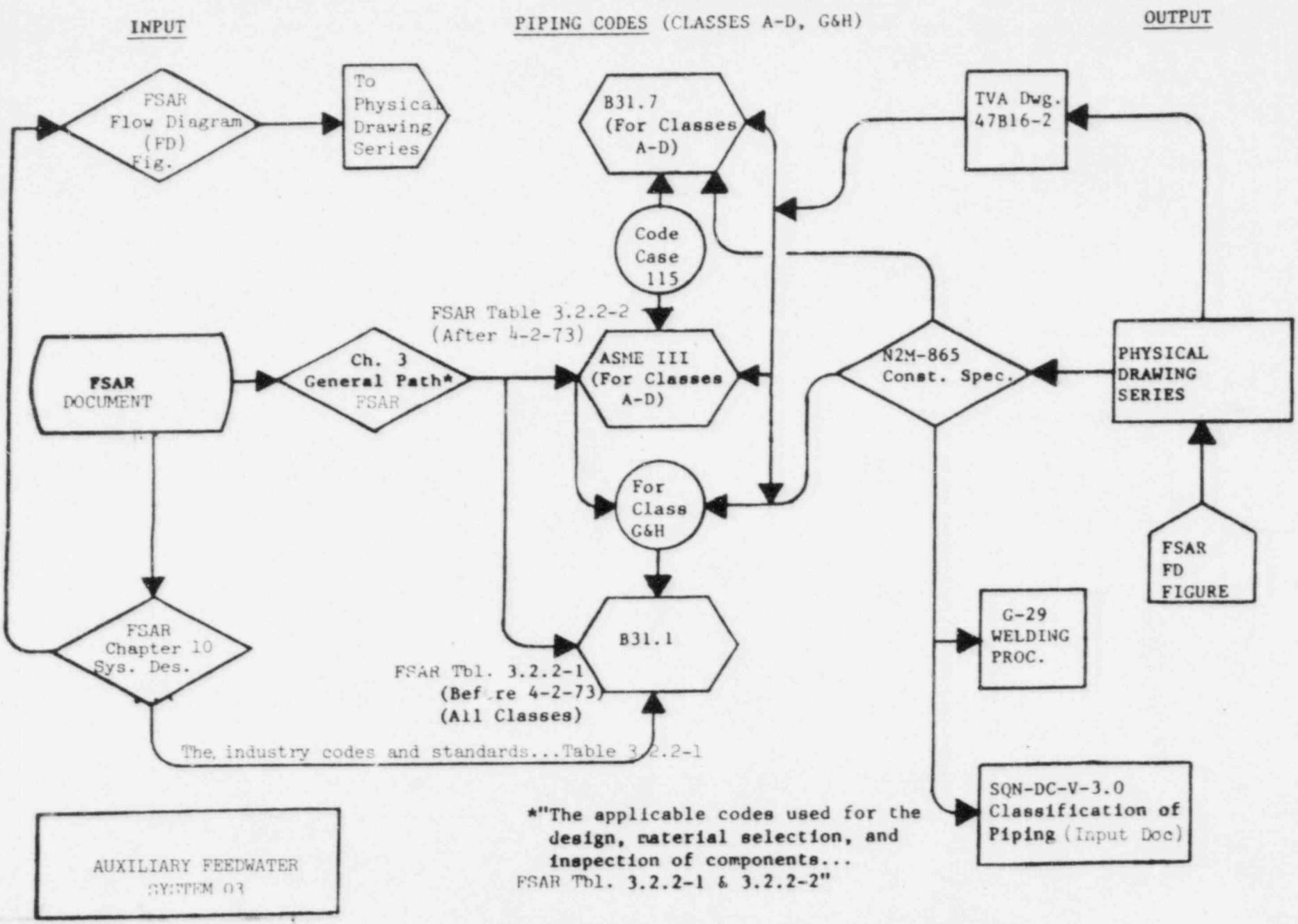
WELDING CODES AND PROCEDURES



Attachment 3
Sheet 8 of 98

SEQUOYAH NUCLEAR PLANT

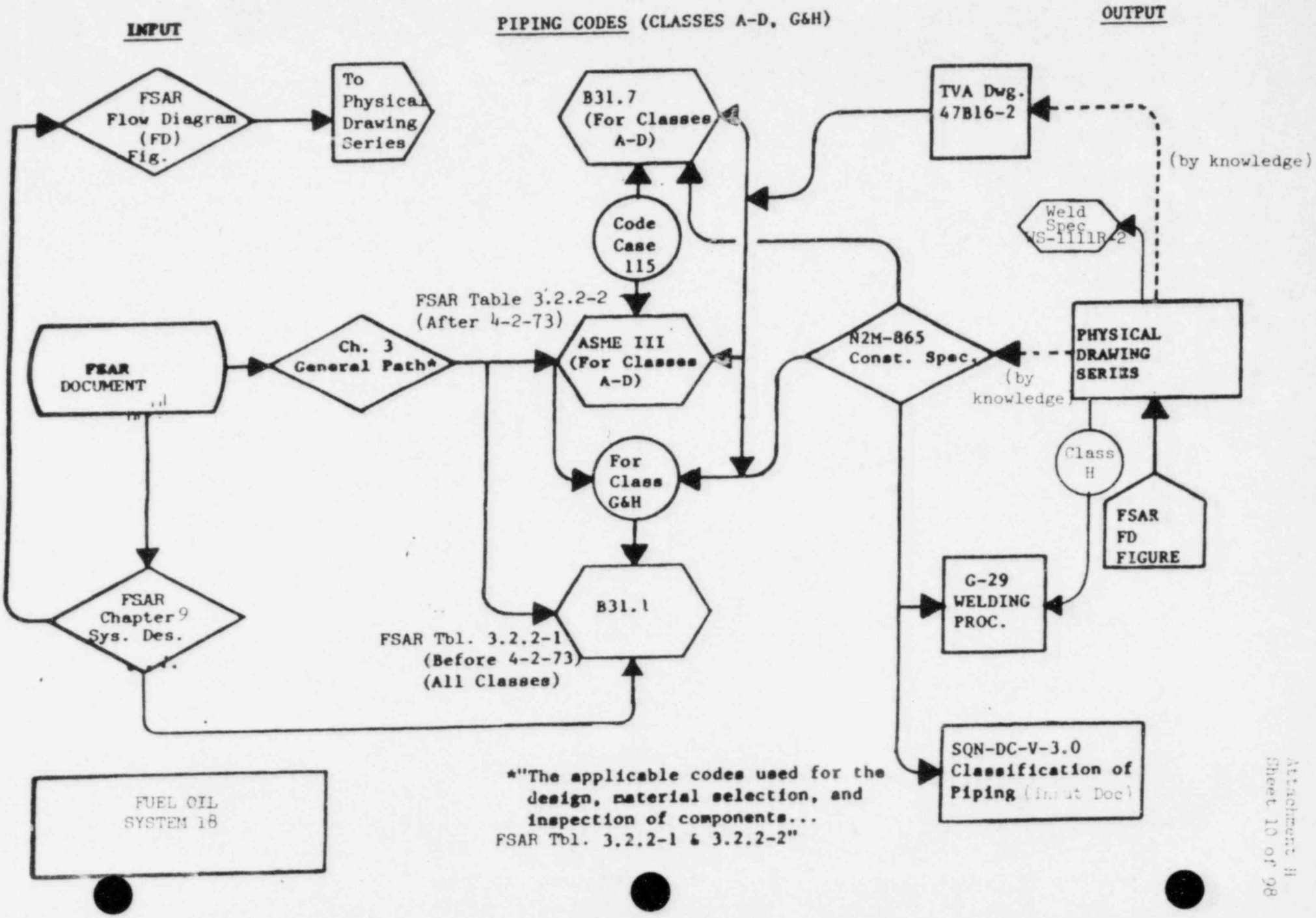
WELDING CODES AND PROCEDURES



Attachment 3
Sheet 9 of 9

SEQUOYAH NI AR PLANT

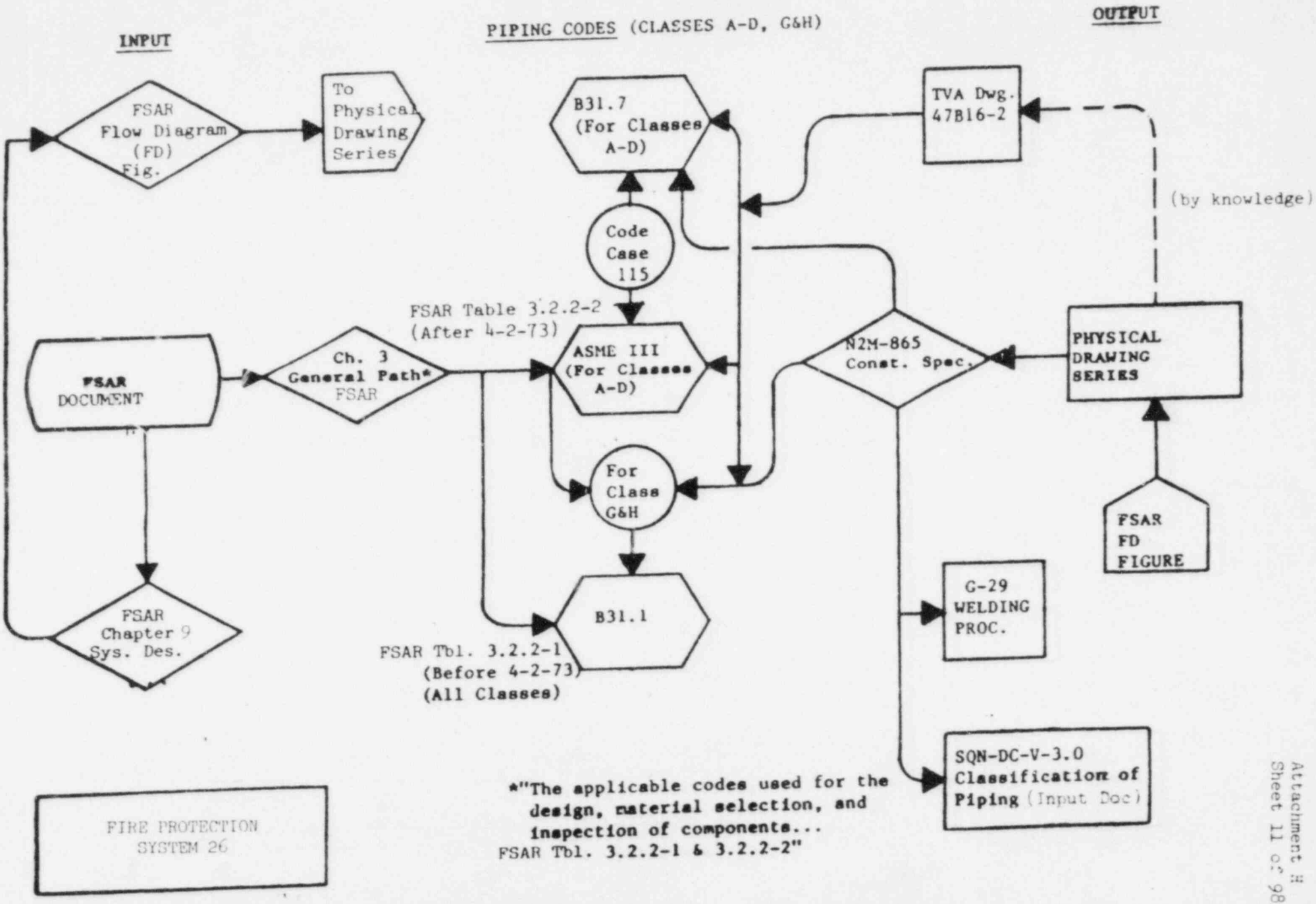
WELDING CODES AND PROCEDURES



SEQUOYAH NUC[illegible] PLANT

WELDING CODES AND PROCEDURES

PIPING CODES (CLASSES A-D, G&H)

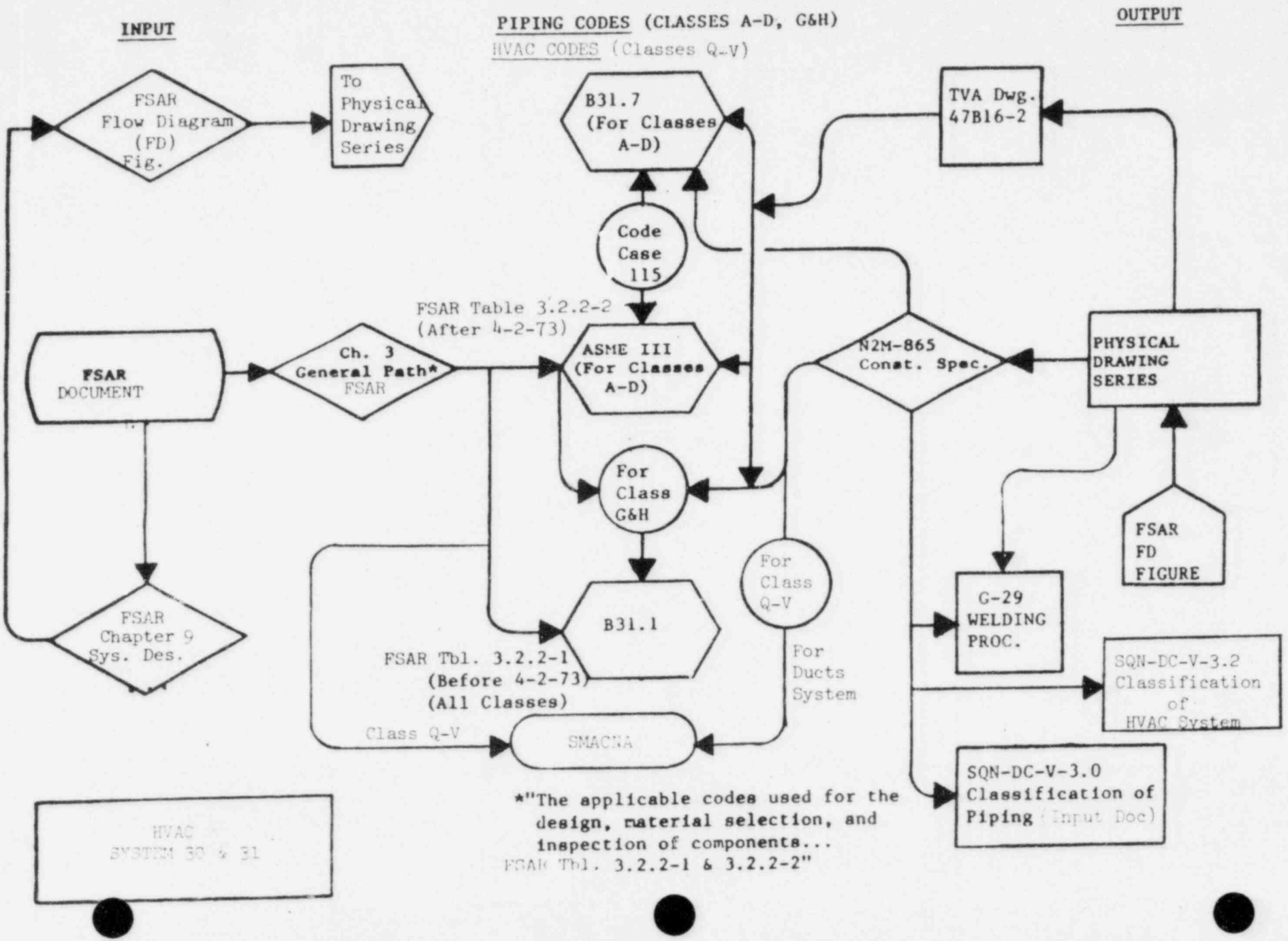


*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

Attachment #
Sheet 11 of 98

SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES

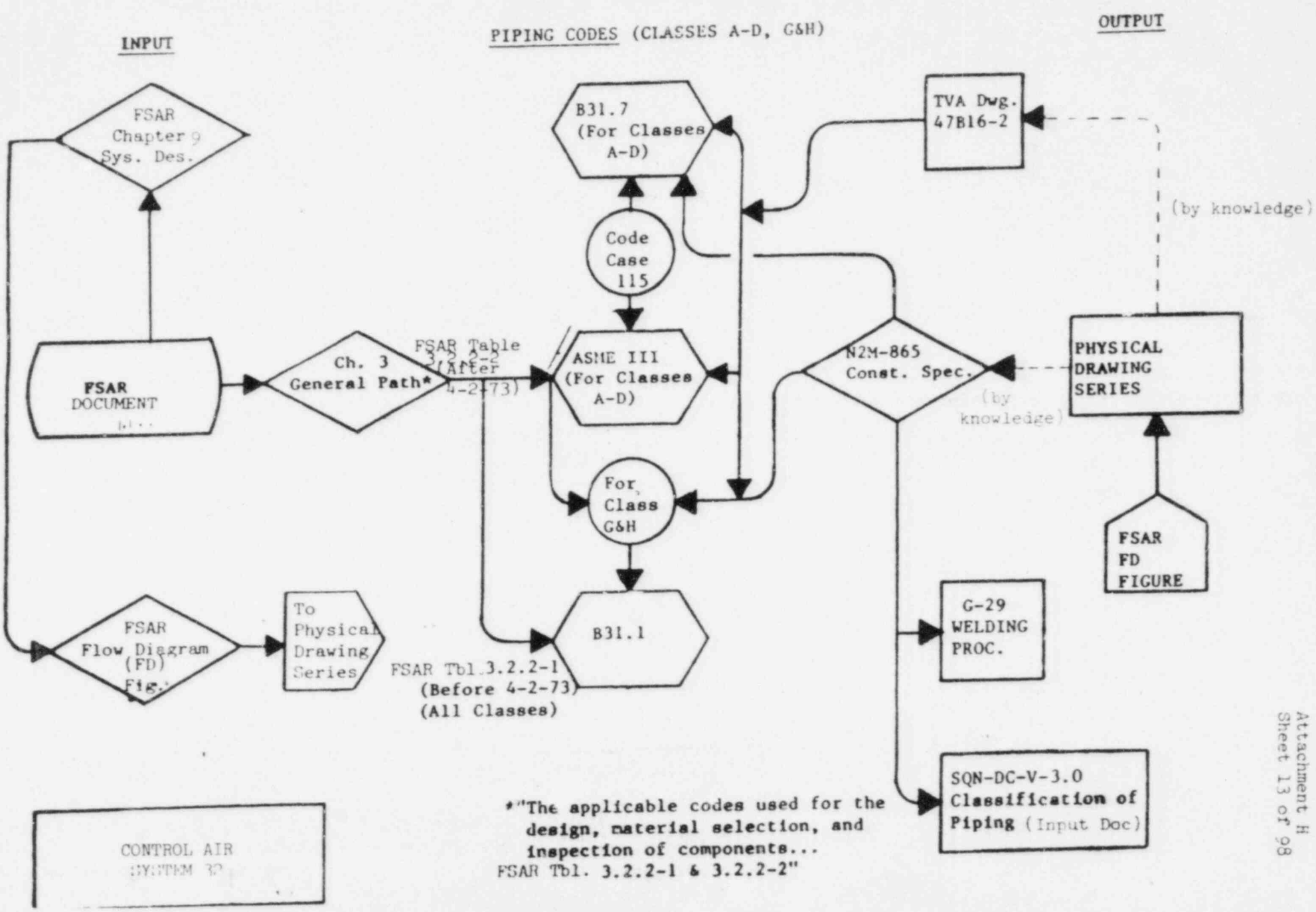


Attachment II
Sheet 12 of

SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES

PIPING CODES (CLASSES A-D, G&H)

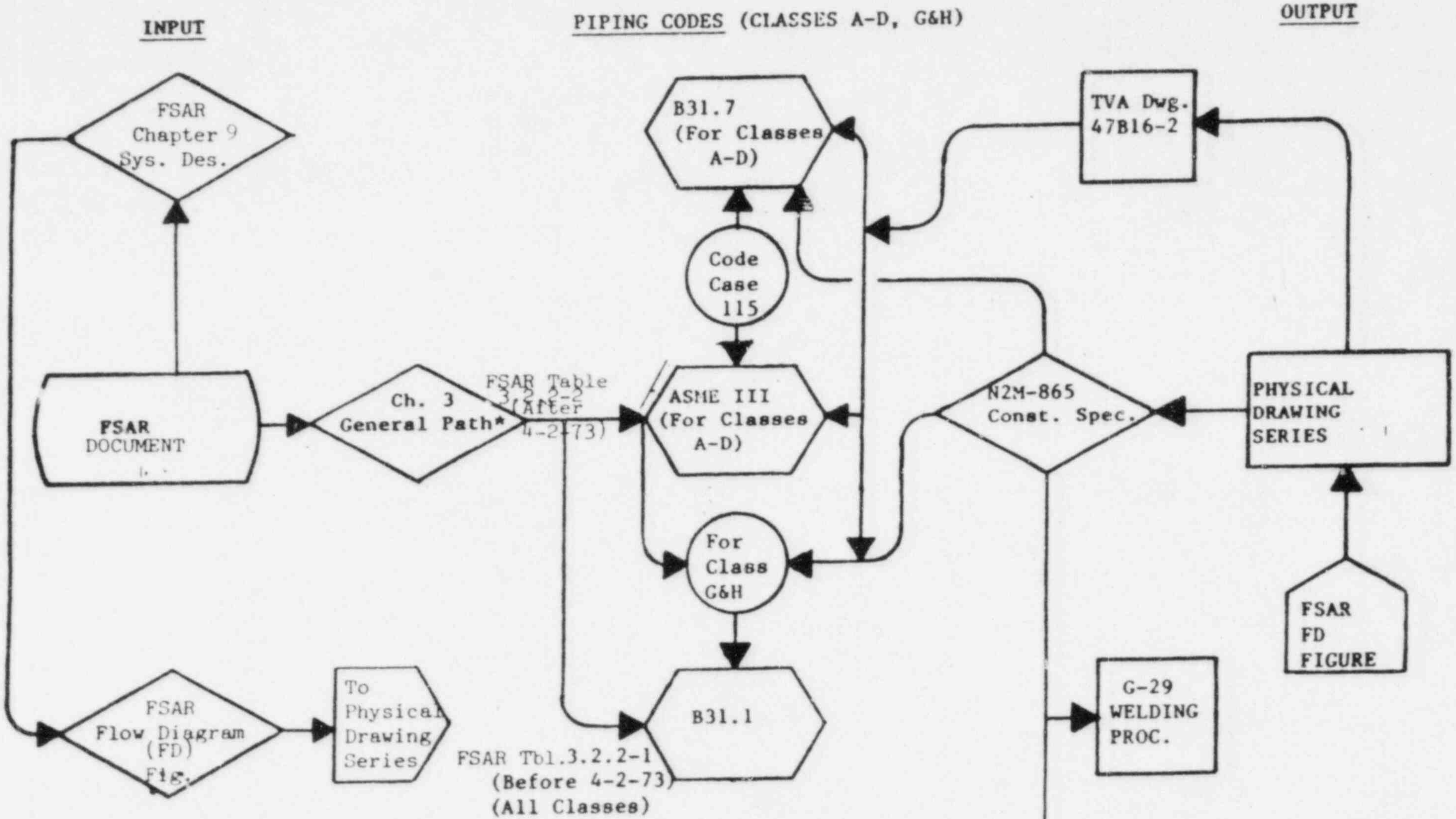


*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

Attachment H
Sheet 13 of 98

SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES



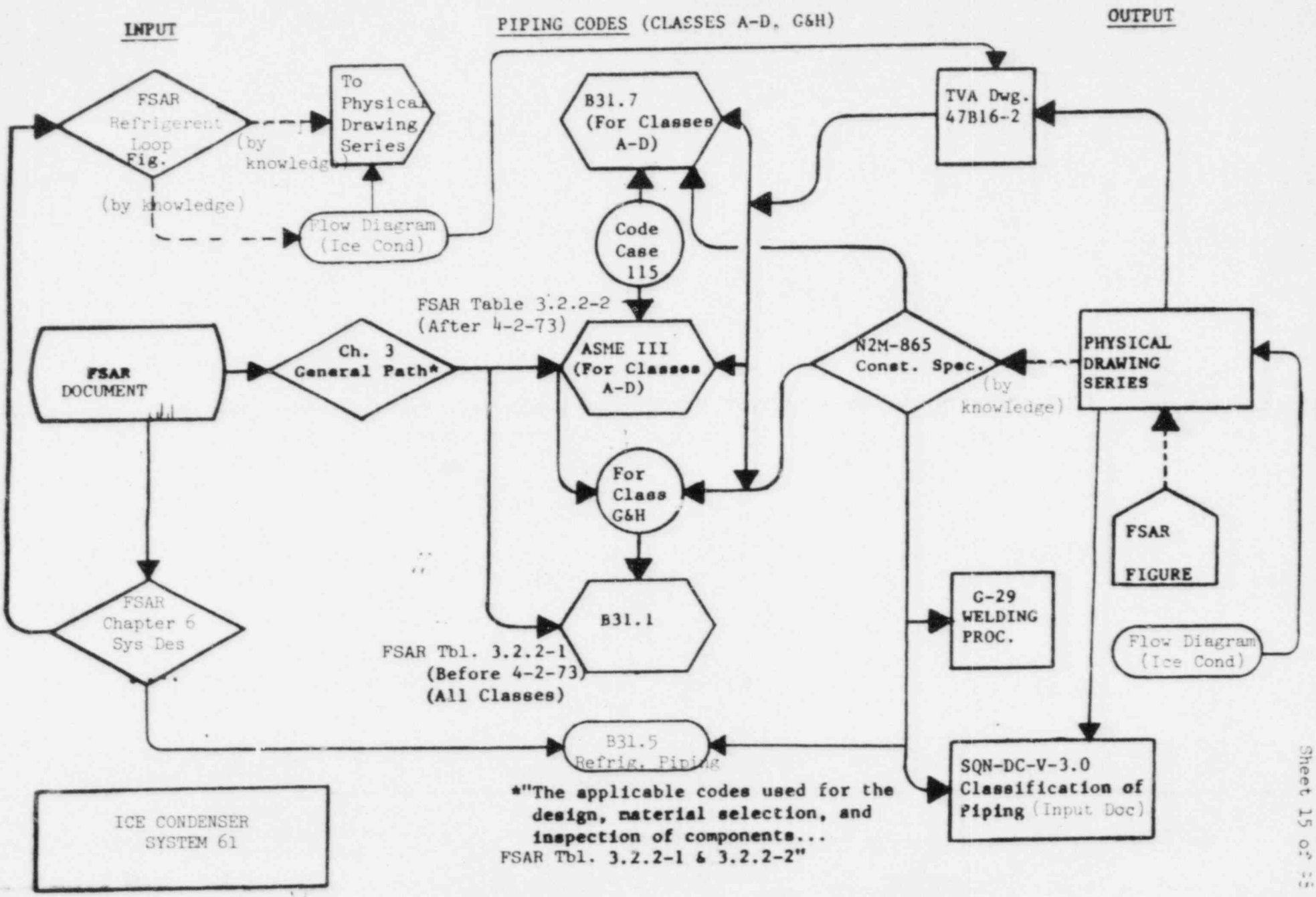
*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

HYDROGEN SYSTEM
39

Attachment 8
Sheet 14 of 38

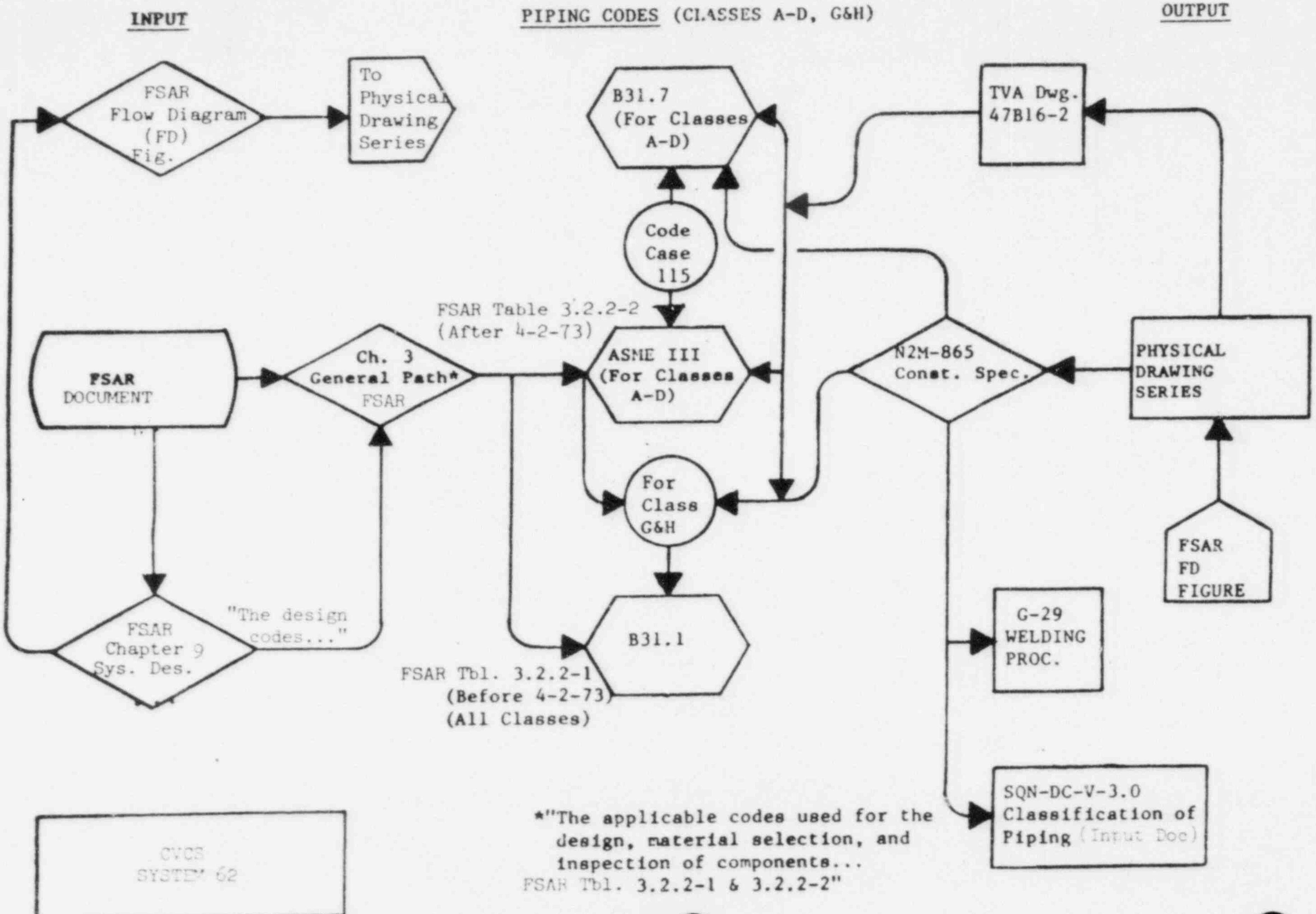
SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES



SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES

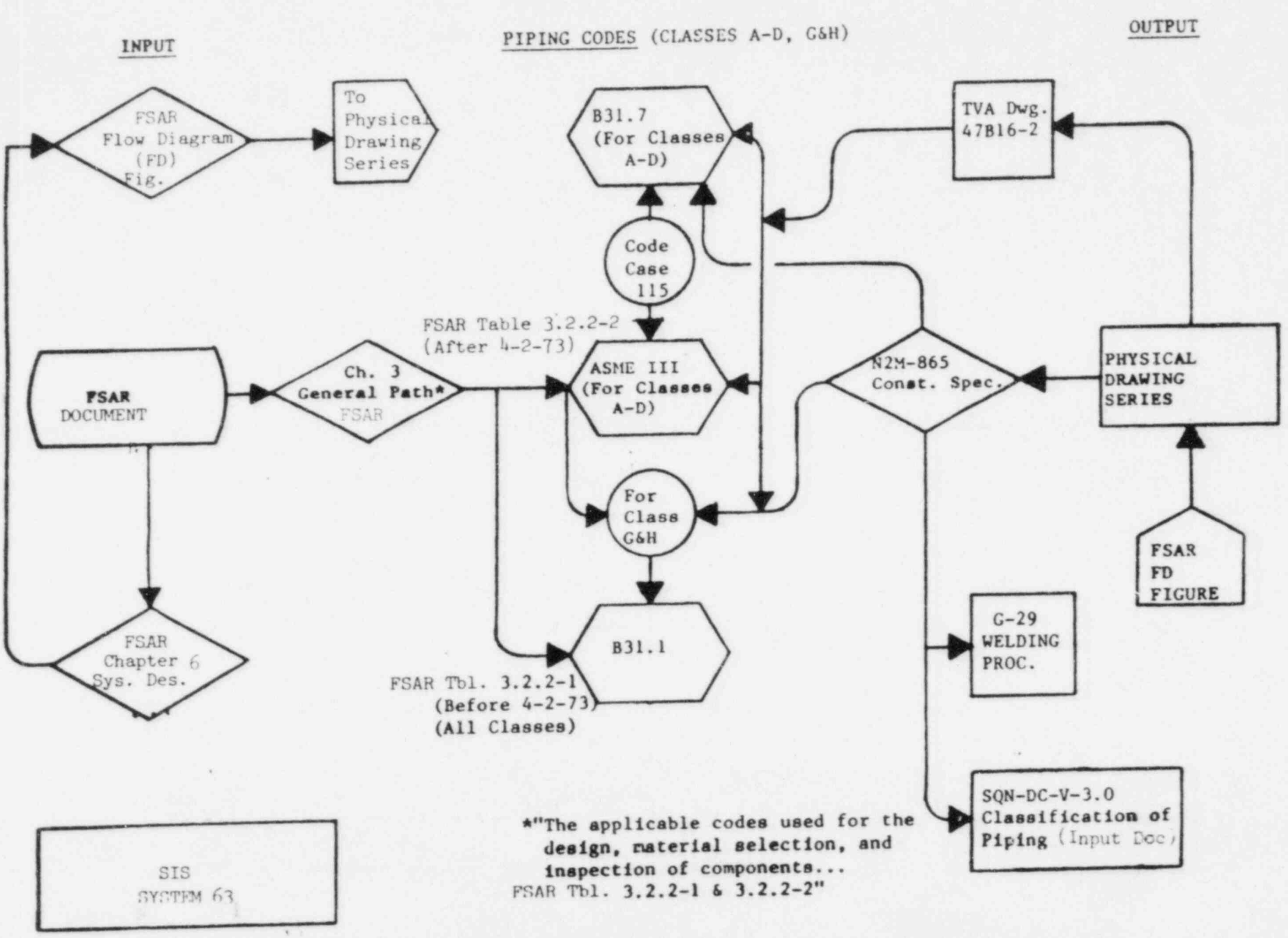


Attachment H
Sheet 16 of 68

SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES

PIPING CODES (CLASSES A-D, G&H)

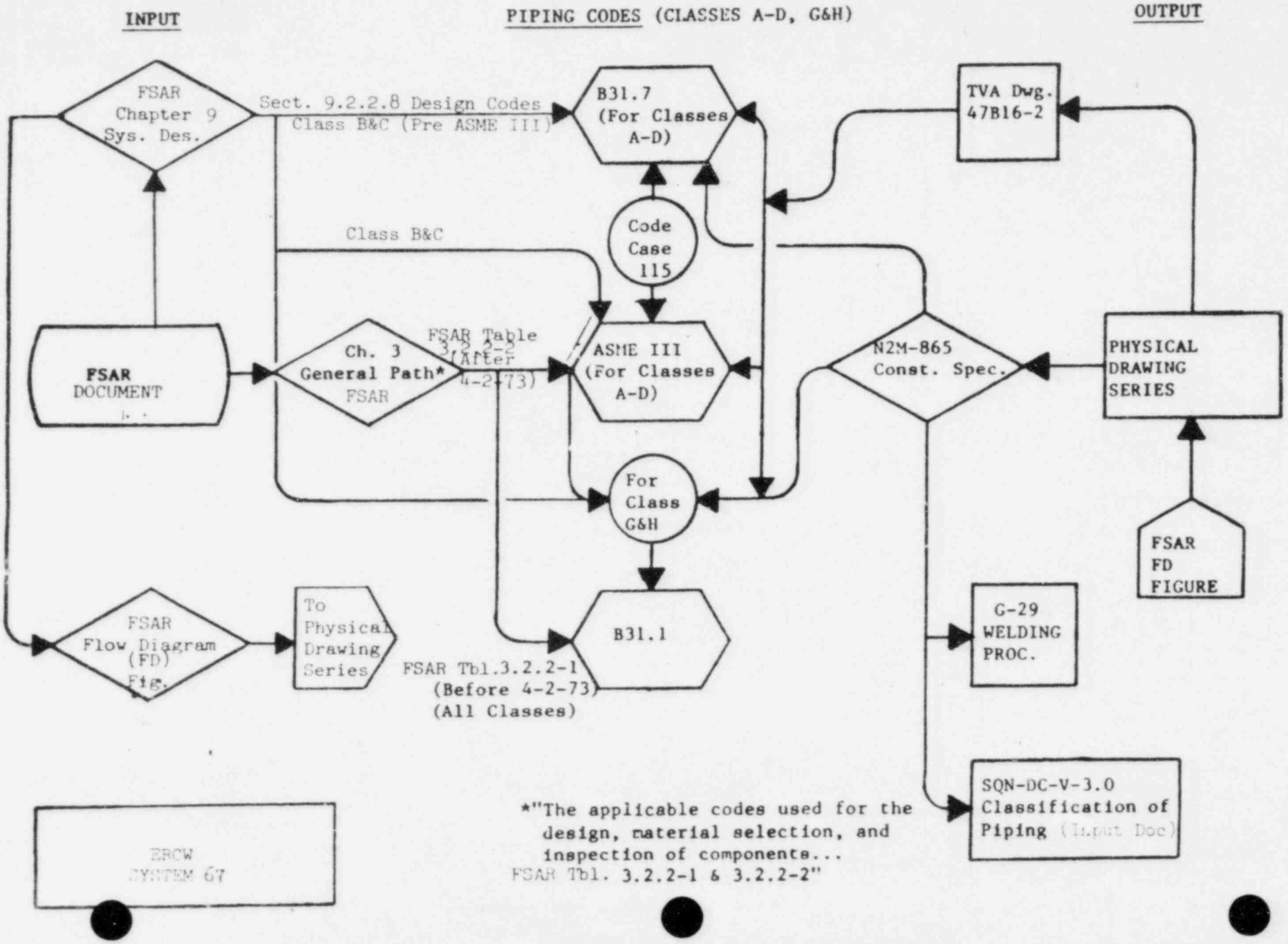


*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

Attachment 2
Sheet 17 of 33

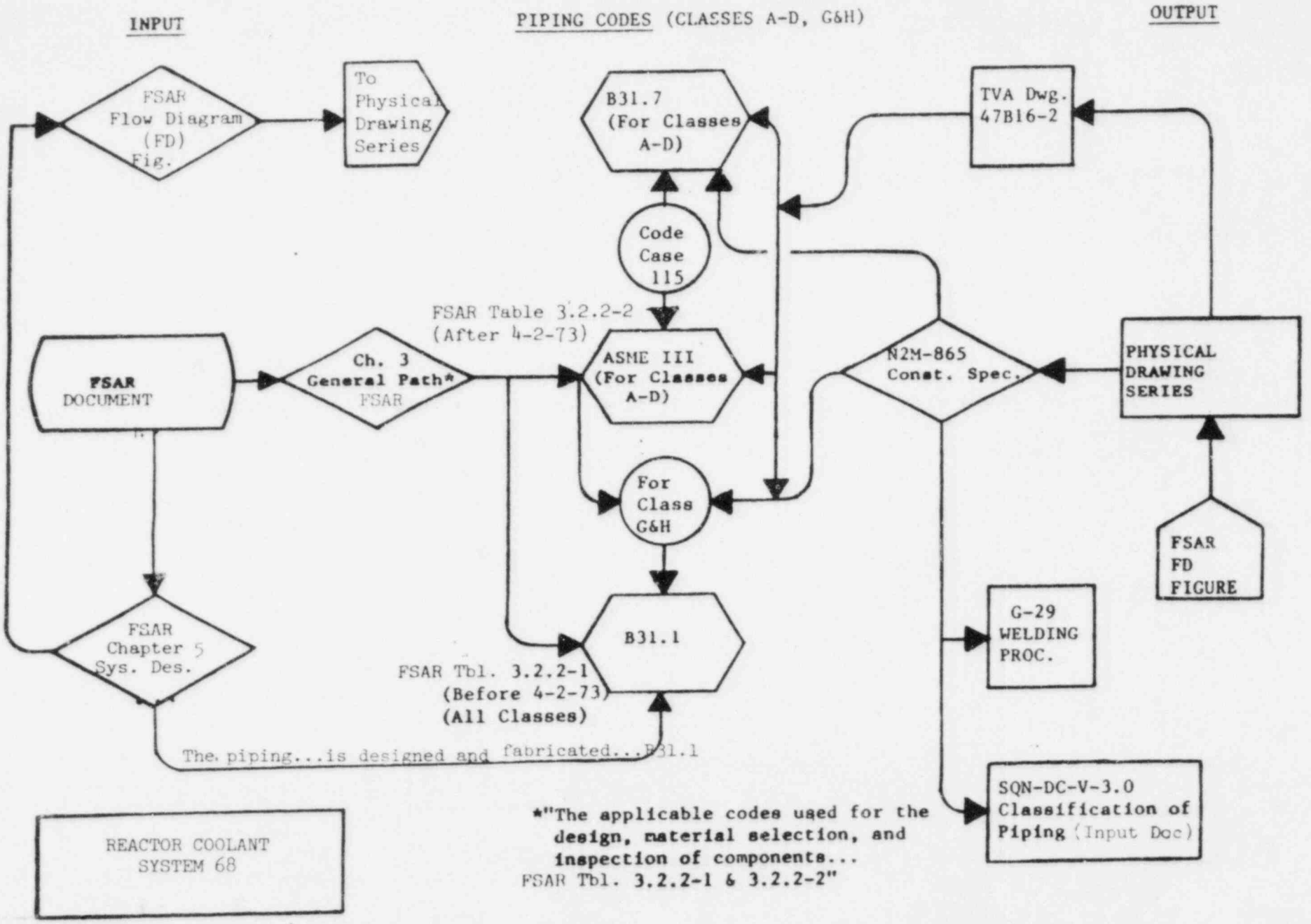
SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES



SEQUOYAH NUCLEAR PLANT

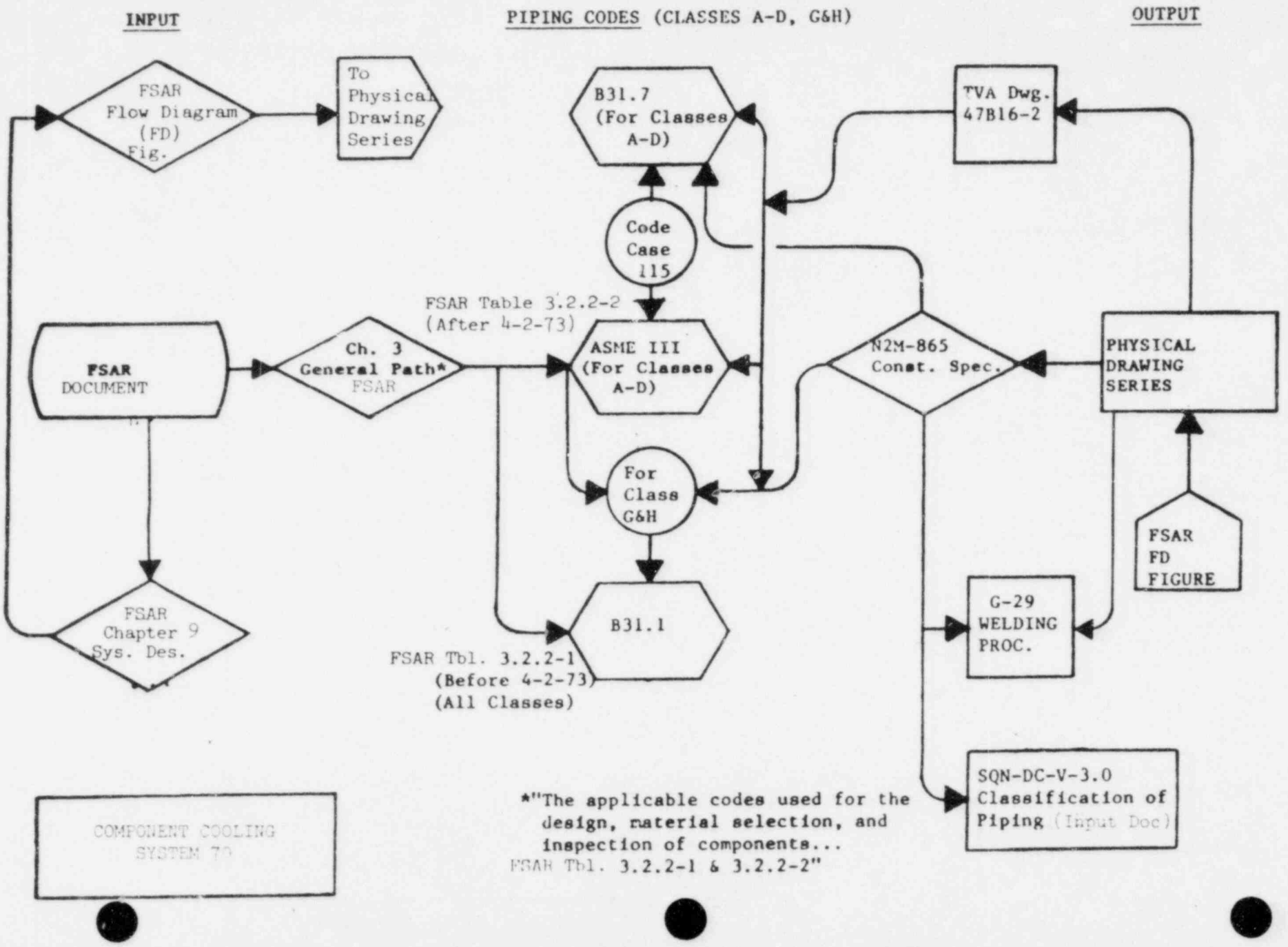
WELDING CODES AND PROCEDURES



Attachment 2
Sheet 19 of 28

SEQUOYAH NUCLEAR PLANT

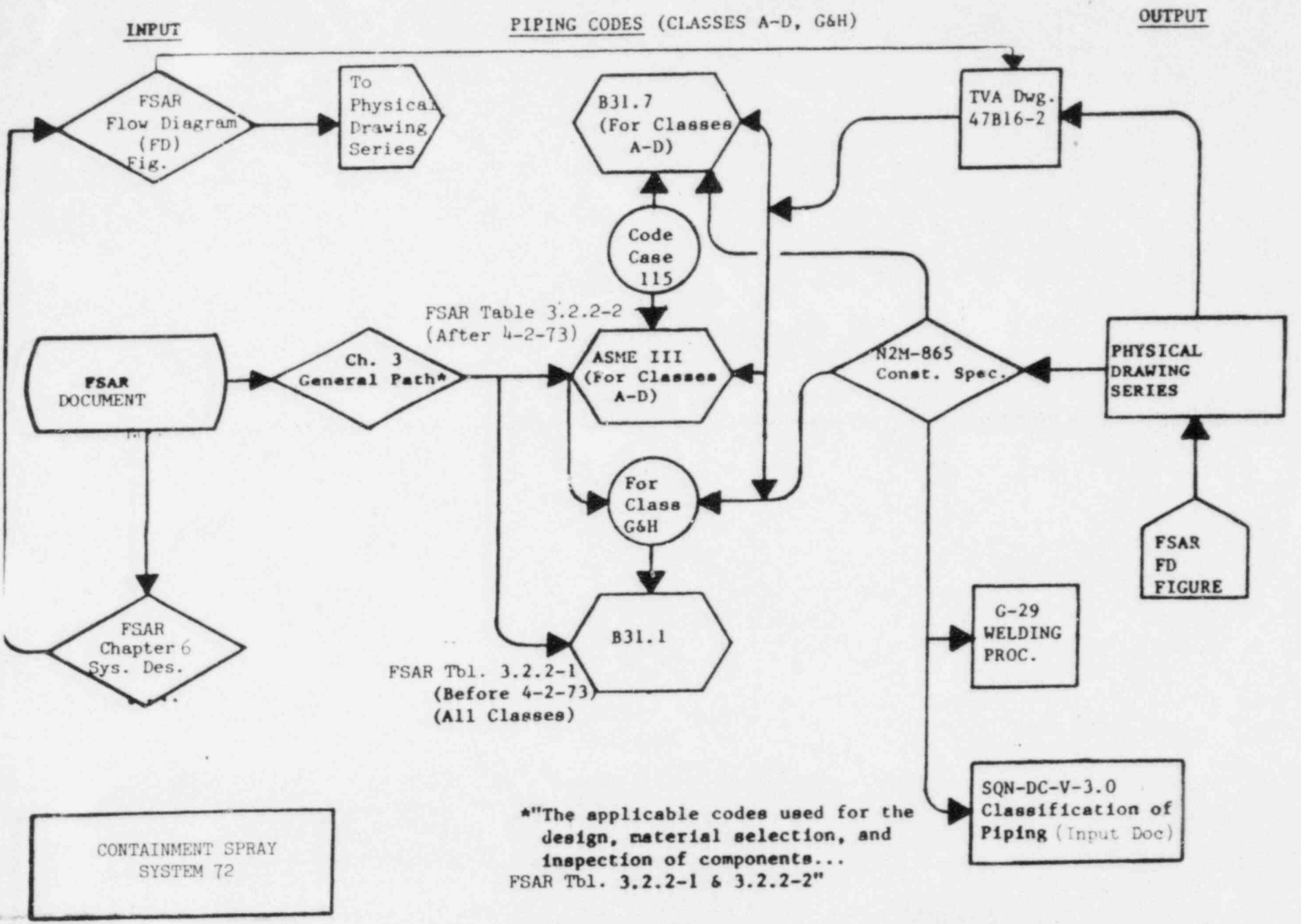
WELDING CODES AND PROCEDURES



Attachment 2
Sheet 20 of 29

SEQUOYAH NUC[illegible] PLANT

WELDING CODES AND PROCEDURES

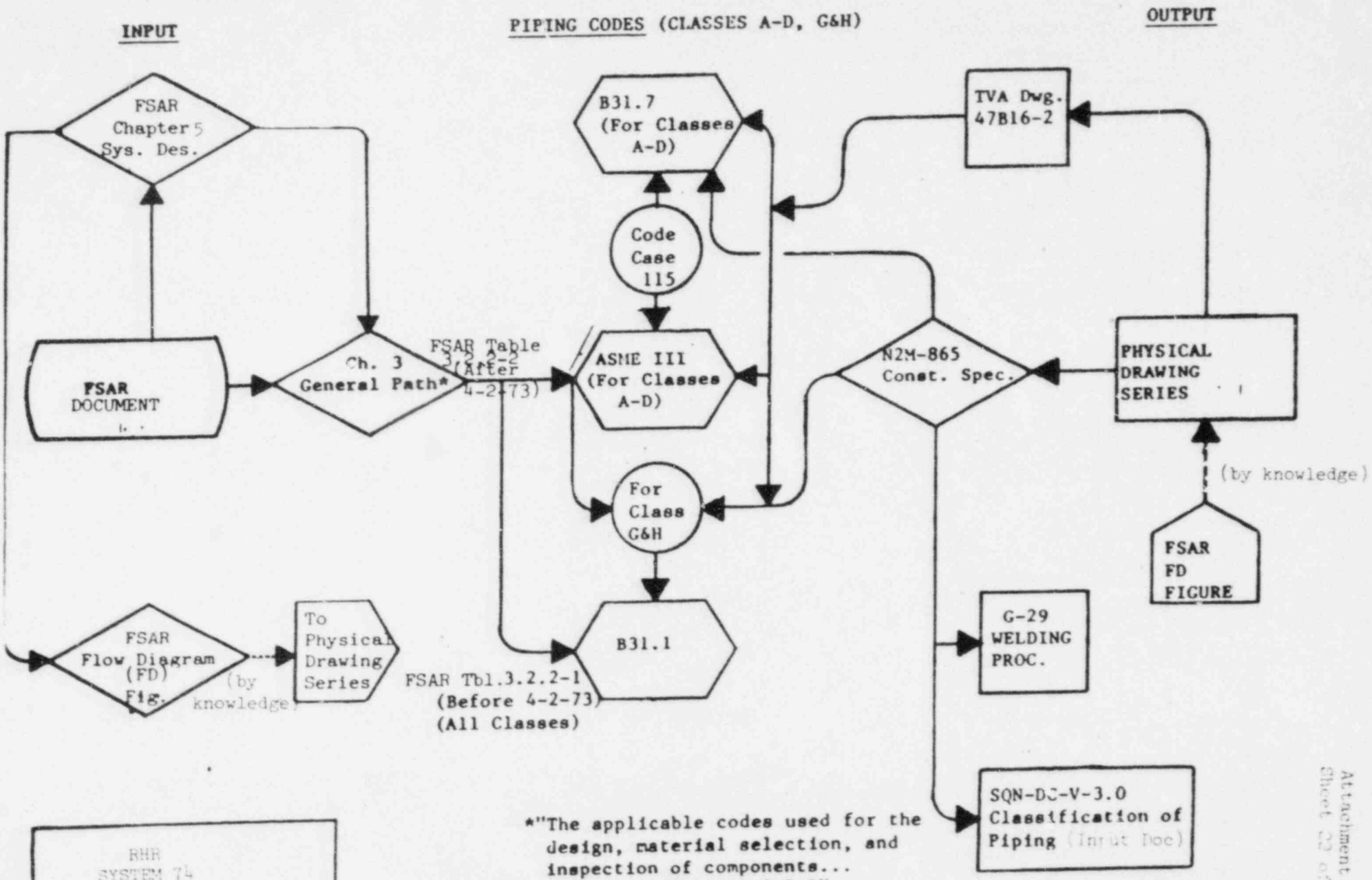


*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

SEQUOYAH NUC. R PLANT

WELDING CODES AND PROCEDURES

PIPING CODES (CLASSES A-D, G&H)

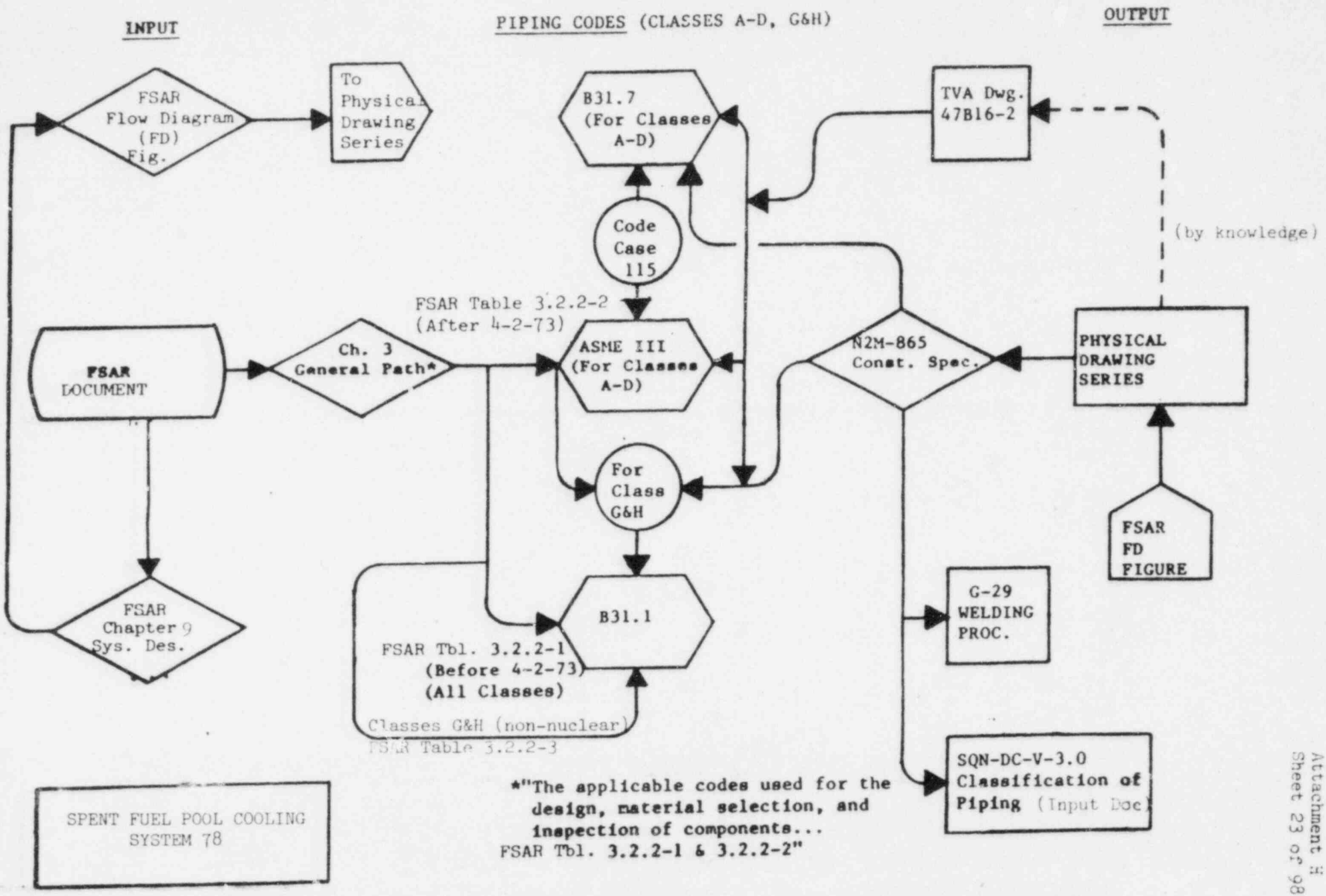


*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

Attachment H
Sheet 12 of 16

SEQUOYAH NUCLEAR PLANT

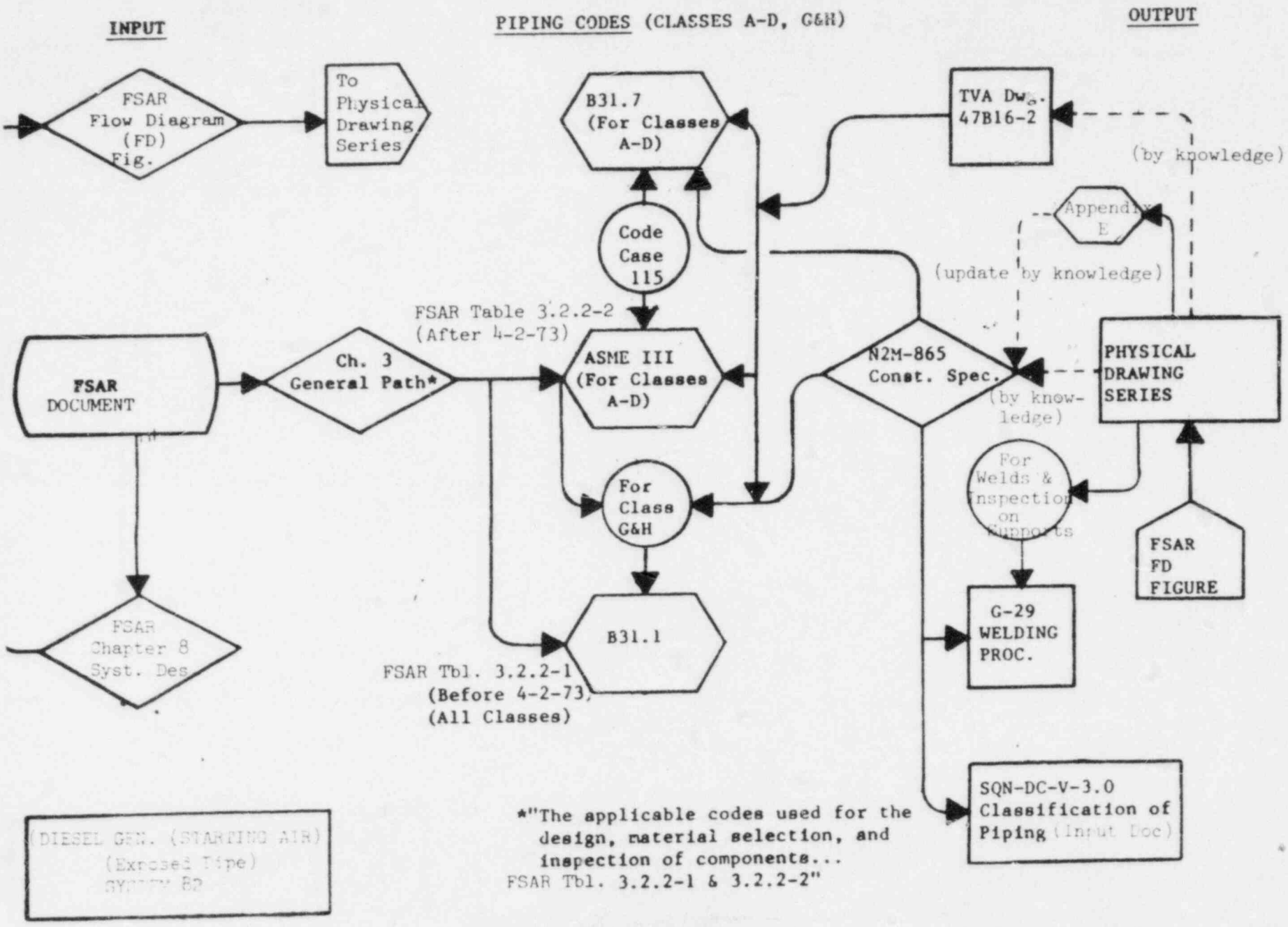
WELDING CODES AND PROCEDURES



*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

SEQUOYAH NUCL) PLANT

WELDING CODES AND PROCEDURES

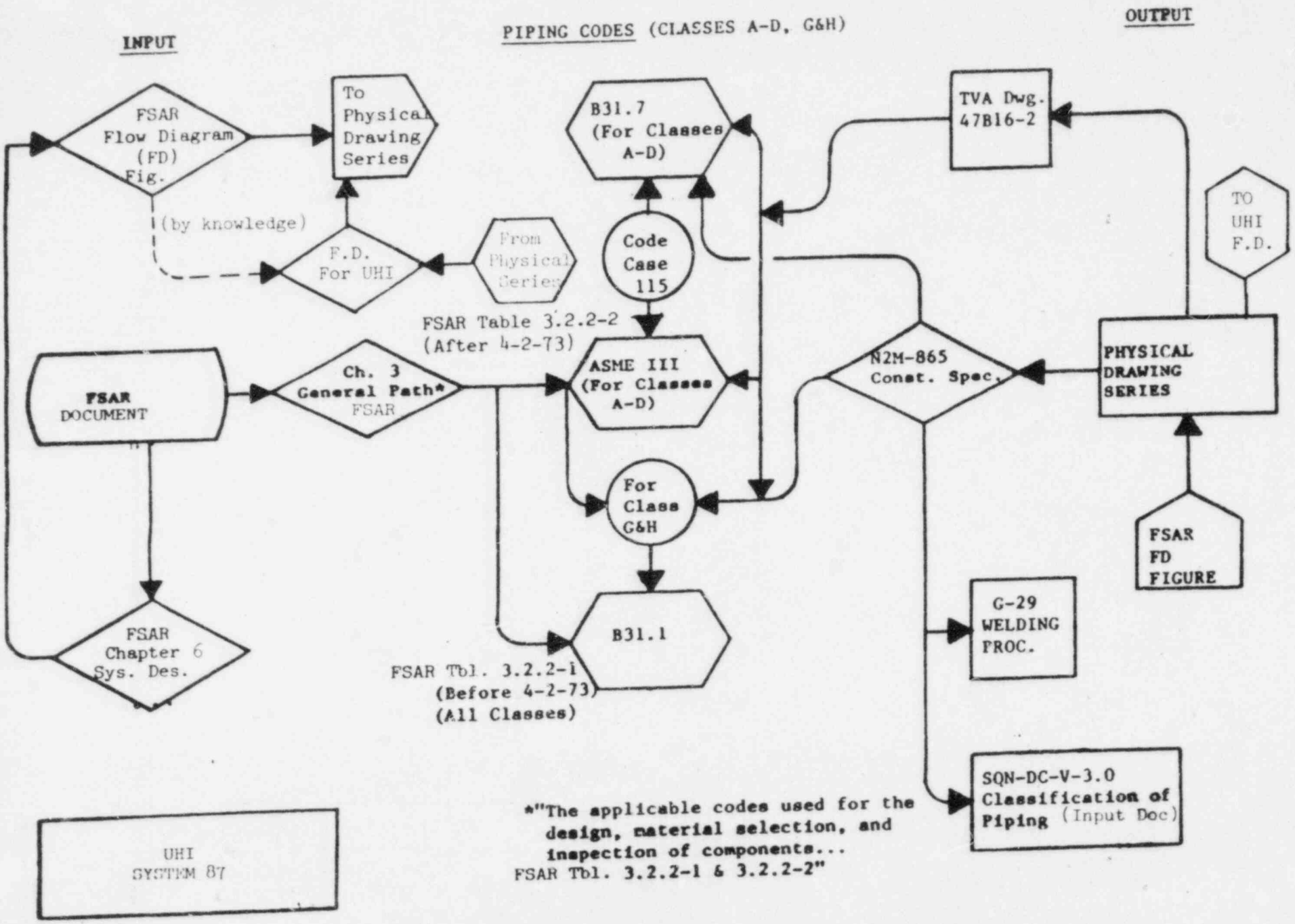


Attachment 8
Sheet 24 of 25

SEQUOYAH NUCLEAR PLANT

WELDING CODES AND PROCEDURES

PIPING CODES (CLASSES A-D, G&H)



*"The applicable codes used for the design, material selection, and inspection of components... FSAR Tbl. 3.2.2-1 & 3.2.2-2"

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L6183

(1) Design Statement No.

SQN-01-1

SQM 001

(2) Responsible Group/Section SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR

(a) "The main steam supply system is designed to TVA Class B requirements from the steam generator outlet out to and including the main steam line isolation and check valves."

(b) "Applicable codes, standards, and design conditions are shown in Table 10.3.2-1." (c)"TVA Class B-Code, ANSI B31.1, Code for Pressure piping with inspection, test, and fabrication to ANSI B31.7..

(4) FSAR Section

(a) 10.3.1 & 10.3.2.1
(b) 10.3.2.2
(c) Table 10.3.2-1

(5) FSAR Page - (a) 10.3-1 (b) 10.3-4 (c) Table 10.3.2-1

(6) Design Documents

A. Flow Diagram: (FSAR Fig. 10.3.2.1 47W801-1)
B. Piping Dwg.: (a) 47W400-1 & (b) -4
C. Piping Sys. Classification 47B16-2
D. Construction Spec N2M-865

(7) Contact(s) _____

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 and ANSI B31.7 as applicable for the main steam supply system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the piping drawings, DOC B, and the piping sys. classification, DOC C. DOC B references construction spec N2M-865 for field fabrication and erection which in turn defines const. spec. G-29 as meeting TVA requirements for fabrication. DOC Ba(47W400-1) shows pipe class.

N/A	C. W. Perkins	12/18/85	Daryl W. Bryan	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-[illegible]

(1) Design Statement No.

SQN-01-2

SQM 002

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The main steam supply system is designed to TVA Class B requirements from the steam generator outlet out to and including the main steam line isolation and check valves.

b)"Applicable codes, standards, and design conditions are shown in table 10.3.2-1" (c) "TVA Class B-code, ANSI B31.1, Code for pressure piping with inspection, test, and fabrication to ANSI B31.7..."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings a)47W400-4 & b) -16 R6
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 and ANSI B31.7 as applicable for the main steam supply system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the piping drawings, Document B, and the piping system classification, Document C, Document B, references construction spec N2M-865 for field fabrication and erection which in turn defines const spec. G-29 as meeting TVA requirements for fabrication. DOC Bb (47W400-16) shows pipe class.

N/A	C. W. Perkins	12/19/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5934

(1) Design Statement No.

SQN-01-3

SQM 003

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-1 R17 & -4 R21
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B shows pipe class.

N/A	C. W. Perkins	12/20/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-3005

(1) Design Statement No.

SQN-01-4

SQM 004

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-2 R21 & -4 R21 (B1) & -1 R17 (B2)
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B2 shows pipe class.

N/A	C. W. Perkins	12/20/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019 04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5696

(1) Design Statement No.

SQN-01-5

SQM 005

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-3 R13 & -4 R21 (B1) & -1 R17 (B2)
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B shows pipe class.

N/A	C. W. Perkins	12/20/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5914

(1) Design Statement No.

SQN-01-6

SQM 006

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-4 R20 & -1 R17
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s) ______

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent (circled) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B1 shows pipe class.

N/A	C. W. Perkins	12/21/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment H
Sheet 31 of 92

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5773

(1) Design Statement No.

SQN-68-7

SQM 007

(2) Responsible Group/Section: SQEP - Mechanical Group #3

(3) Design Statement as Presented in FSAR: (a) The piping in the RCS pressure boundary is safety Class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1. (b) A piping and instrumentation diagram of the reactor coolant system is shown on Figure 5.1-1.

(4) FSAR Section
(a) 5.5.3.1
(b) 5.1.2

(5) FSAR Page
(a) 5.5-18
(b) 5.1-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Dwg: 47W465-1 & -6
(C) TVA Piping System Classification 47B16-2
(D) N2M-865 - Construction Spec
(E) Piping Mod Dwg - 47W465-2 R23
47W465-7 R19

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs (DOC B) and piping system classification (DOC C). DOC B references Const Spec (DOC D) N2M-865 which defines Const Spec G-29 as meets TVA requirements for fabrication. Piping Mod Dwg (DOC E) defines TVA pipe class.

N/A	Daryl W. Bryan	1/4/86	C. W. Perkins	1/6/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5856

(1) Design Statement No.

SQN-68-8

SQM-008

(2) Responsible Group/Section: SQEP - Mechanical Group #3

(3) Design Statement as Presented in FSAR: (a) The piping in the RCS pressure boundary is safety Class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1. (b) A piping and instrumentation diagram of the reactor coolant system is shown on Figure 5.1-1.

(4) FSAR Section
(a) 5.5.3.1
(b) 5.1.2

(5) FSAR Page
(a) 5.5-18
(b) 5.1-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Dwg: 47W465-1 & -6)
(C) TVA Piping System Classification 47B16-2
(D) N2M-865 - Construction Spec
(E) Piping Mod Dwg - 47W465-2 R24

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent (X)

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const Spec (DOC D) N2M-865 which defines Const Spec G-29 as meets TVA requirements for fabrication. Piping Mod Dwg (DOC E) defines TVA pipe class.

N/A	Daryl W. Bryan	1/4/86	C. W. Perkins	1/6/86
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L-6272

(1) Design Statement No.

SQN-03

SQM 009

(2) Responsible Group/Section SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) and given in Table 3.2.2-1." (For the Auxiliary Feedwater System)

(4) FSAR Section

10.4.7.2

10.4.7.3

(5) FSAR Page - 10.4-30
10.4-38 & 42

(6) Design Documents

(A) 47W803-2 (Aux. Fdwtr Sys. F.D.)
(B) 47W427-1 (Aux. Fdwtr Piping Series)
(C) 47W427-7 R16 (A. F. W. Piping Dwg.)
(D) N2M-865 (Construction Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-7 R17

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required on DOC G are per the findings herein, i.e., DOC G refs. DOC D and back thru the chain. TVA Class is described on the Flow Diagram---(represented by DOC A).

N/A	Lee F. Graser	12/18/85	Daryl W. Bryan	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-6005

(1) Design Statement No.

SQN-03-02

SQM 010

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr Syst. FD)
(B) 47W427 (Aux. Fdwtr Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W427-8 R14

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/19/85	Daryl W. Bryan	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5460

(1) Design Statement No.

SQN-03-3

SQM 011

(2) Responsible Group/Section: SQN - Mechanical Group #?

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr Syst. FD)
(B) 47W427 (Aux. Fdwtr Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-1 R16

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/21/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5842

(1) Design Statement No.

SQN-03-4

SQM 012

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr. Syst. FD)
(B) 47W427 (Aux. Fdwtr. Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-2 R17

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/21/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment II
Sheet 37 of 53

096019.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5643

(1) Design Statement No.

SQN-03-5

SQM 013

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr. Syst. FD)
(B) 47W427 (Aux. Fdwtr. Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-2 R16

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/21/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment II
Sheet 48 of 98

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5769

(1) Design Statement No.

SQN-03-6

SQM 014

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr. Syst. FD)
(B) 47W427 (Aux. Fdwtr. Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-5 R6

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent	Minor Inconsistencies Between FSAR and Design Documents	FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5699

(1) Design Statement No.

SQN-03-7

SQM 015

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the Aux. Feedwater System)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr. Syst. FD)
(B) 47W427 (Aux. Fdwtr. Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg.)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W427-5 R5

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are per the findings herein, i.e., DOC G refs. DOC B and back thru the chain. Output DOC G refs. DOC B which refs. the flow diagram (represented by DOC A). The flow diagram shows TVA class.

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6183

(1) Design Statement No.

SQN-3-8

SQM 016

(2) Responsible Group/Section: SQN Mechanical Group Section #3

(3) Design Statement as Presented in FSAR: All piping and valves in the feedwater system from the condenser hotwell to the feedwater isolation valve is designed in accordance with ANSI B31.1, 1967, while the remainder of the system is designed in accordance with ANSI B31.1 and inspected and tested in accordance with B31.7 (FSAR Sec. 10.4.7.1.2)

(4) FSAR Section
10.4.7.1, 10.4.7.1
10.4.7.1.2

(5) FSAR Page
10.4-21
10.4-24

(6) Design Documents
(A) 47W803-1 (FW FD) FSAR Fig 10.4.7-2
(B) 47W401-4 (FW Piping Dwg) Notes
(C) N2M-865 (Const Spec)
(D) G29 (Welding Spec)
(E) 47W401-1 R27 (Piping Dwg.)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the appropriate design codes (Sect. 10.4.7.1.2) and refs. FW FD 47W803-1 (FSAR Fig. 10.4.7-2). The FD does not ref. the physical piping dwg. series thereby eliminating a clear path from the FSAR. DOC B refs. DOC C and DOC C refs DOC D which spells out the welding requirements. DOC E shows physical piping changes. TVA Class is shown on DOC E.

N/A	J. L. Purkey	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019 04

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN - L5934

(1) Design Statement No.
SQN-3-9

SQM 017

(2) Responsible Group/Section SQN Mechanical Group Section #3

(3) Design Statement as Presented in FSAR All piping and valves in the feedwater system from the condensor hotwell to the feedwater isolation valve is designed in accordance wit ANSI B31.1, 1967 while the remainder of the system is designed in accordance with ANSI B31.1 and inspected and tested in accordance with B31.7 (FSAR Section 10.4.7.1.2).

(4) FSAR Section
10.4.7.1, 10.4.7.1.1, 10.4.7.1.2

(5) FSAR Page - 10.4-21; 10.4-24

(6) Design Documents
(A) 47W803-1 (FW FD) FSAR Fig. 10.7.7-2
(B) 47W401-4 (FW Piping Dwg) Notes
(C) N2M-865 (Const Spec)
(D) G29 (Welding Spec)
(E) 47W401-1 R28 (Piping Dwg.)

(7) Contact(s) _____

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the appropriate design codes (Sect. 10.4.7.1.2) and contains FW FD 47W803-1 (FSAR Fig. 10.4.7-2) The FD does not ref the physical piping drawing series thereby eliminating a clear path from the FSAR. DOC B refers DOC C and DOC C refs DOC D which spells out the welding requirements. DOC E shows physical piping changes. TVA Class is shown on DOC E.

N/A	J. L. Purkey	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5024
FCR 2450

(1) Design Statement No.

SQN-3-10

SQM 018

(2) Responsible Group/Section: SQN Mechanical Group Section #3

(3) Design Statement as Presented in FSAR: All piping and valves in the feedwater system from the condenser hotwell to the feedwater isolation valve is designed in accordance with ANSI B31.1, 1967, while the remainder of the system is designed in accordance with ANSI B31.1 and inspected and tested in accordance with B31.7 (FSAR Sec. 10.4.7.1.2)

(4) FSAR Section
10.4.7.1, 10.4.7.1.1
10.4.7.1.2

(5) FSAR Page
10.4-21
10.4-24

(6) Design Documents
(A) 47W803-1 (FW FD) FSAR Fig 10.7.7-2
(B) 47W401-4 (FW Piping Dwg) Notes
(C) N2M-865 (Const Spec)
(D) G29 (Welding Spec)
(E) 47W401-1 R26 (Piping Dwg.)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the appropriate design codes (Sect. 10.4.7.1.2) and contains FW FD 47W803.1 (FSAR Fig. 10.4.7-2). The FD does not ref. the physical piping dwg. series thereby eliminating a clear path from the FSAR. DOC B refs. DOC C and DOC C refs DOC D which spells out the welding requirements. DOC E shows physical piping changes. TVA Class is shown on DOC E.

N/A	J. L. Purkey	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L5599

(1) Design Statement No.
SQN-26-1

SQM 019

(2) Responsible Group/Section SQN Mechanical Group - Section 3

(3) Design Statement as Presented in FSAR

The nuclear safety-related objectives of the fire protection system is to: (a) provide fire protection in those plant areas where a fire could affect the ability to achieve and maintain safe plant shutdown. (b) protect safety-related equipment against failure of FP system components. (c) provide emergency feedwater to the steam generators under maximum design basis flood conditions (FSAR 9.5.1.1)

(4) FSAR Section
9.5.1.1 & 9.5.1.2
& Fig. 9.5.1-3

(5) FSAR Page
9.5-1

(6) Design Documents
(A) 47W850-2 (FPS - flow diagram)
(B) 47W850-3 (FPS - flow diagram)
(C) 47W491-3 (FPS-Piping Dwgs.)
(D) 47W491-32 R6 (FPS - Piping Dwgs.)
(E) N2M-865 (Construction Spec)
(F) 47W491-1 (FPS-Piping Dwgs.)
(G) 47W491-2 (FPS - Piping Dwgs.)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR includes F.D. (DOC B). DOC B ref the piping drawings DOCS (C, D, E, & G). DOC E ref. the Const Spec N2M865 (DOC E). DOC E refers to design code & G-29 requirements. DOC G ref the Const Welding Spec G-29M. DOC A shows the changes to F.D. and the piping class. DOC C and D show the physical piping changes. The TVA piping classification is indicated on F.D. 47W850-2 (DOC A)

N/A	J. L. Durkey	12/21/85	C. W. Perkins	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-6001

(1) Design Statement No.

SQN-26-2

SQM 020

(2) Responsible Group/Section: SQN - Mechanical Group Section #3

(3) Design Statement as Presented in FSAR: The nuclear safety-related objectives of the fire protection is to: a) provide fire protection in those plant areas where a fire could affect the ability to achieve and maintain safe plant shutdown, b) protect safety related equipment against failure of FP system components, c) provide emergency feedwater to the steam generators under maximum design basis flood conditions (FSAR 9.5.1.1).

(4) FSAR Section: 9.5.1.1, 9.5.1.2 & Fig. 9.5.1-3

(5) FSAR Page: 9.5-1

(6) Design Documents
(A) 47W850-2 (FPS Flow Diagram)
(B) 47W850-3 (FPS Flow Diagram)
(C) 47W491-9 (FPS Piping Drawing)
(D) N2M-865 (Construction Spec)
(E) 47W491-2 (FPS Piping Drawing)
(F) 47W491-1 (FPS Piping Drawing)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR includes FD (DOC B). DOC B refs the piping dwgs. (DOC C, D, F, & G). DOC G refs Const Spec N2M-865 (DOE E). DOC E refs design code requirements & G-29. DOC F refs Const welding spec G29M. DOC D shows revisions to the piping dwgs. and DOC A reflects changes to the flow diagram. The TVA piping classification is indicated on F.D. 47W850-2 (DOC A).

N/A	J. L. Purkey	12/21/85	C. W. Perkins	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-6319

(1) Design Statement No.

SQN-26-3

SQM 021

(2) Responsible Group/Section: SQN - Mechanical Group Section #3

(3) Design Statement as Presented in FSAR: The nuclear safety-related objectives of the fire protection is to: a) provide fire protection in those plant areas where a fire could affect the ability to achieve and maintain safe plant shutdown, b) protect safety related equipment against failure of FP system components, c) provide emergency feedwater to the steam generators under maximum design basis flood conditions (FSAR 9.5.1.1).

(4) FSAR Section
9.5.1.1, 9.5.1.2 & Fig. 9.5.1-3

(5) FSAR Page
9.5-1

(6) Design Documents
(A) 47W850-2 (FPS Flow Diagram)
(B) 47W850-3 (FPS Flow Diagram)
(C) 47W491-1 R20 (FPS Piping Drawing)
(D) 47W491-2 R16 (FPS Piping Drawing)
(E) N2M-865 (Construction Spec)
(F) 47W850-6 (FPS Flow Diagram)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR included FD (DOC B). DOC B refs the piping dwgs. (DOC C & D). DOC C refs the Const Spec N2M-865 (DOC E). DOE E refers to design code requirements. DOC D refs the Const welding spec G-29M and also shows revisions to piping dwgs. DOC A indicates the piping classification. DOC F shows continuation of Class G piping and indicates the changes due to ECN-L6319. The TVA piping class is indicated on FD 47W850-2 (DOC A).

N/A	J. L. Purkey	12/21/85	C. W. Perkins	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5998

(1) Design Statement No.

SQN-62-01

SQM 022

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The design codes of the components in the system (chemical and volume control system) are given (by appropriate safety class) in Section 3.2" (Table 3.2.2-2)

(4) FSAR Section
9.3.4 (and continued in)
3.2 thru 3.2.2.5

(5) FSAR Page
9.3-13 (and continued in)
3.2-1 thru 3.2.4 and FSAR Table 3.2.2-2

(6) Design Documents
(A) 47W809-1 (CVCS - FD)
(B) 47W406-1 (CVCS piping series)
(C) 47W406-4 R11
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W406-1 R17

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to appropriate design codes and to Fig. 9.3.4-1 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D which refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required on DOC G of the 47W406 series (DOC B) are per the findings described herein, i.e., DOC G refs G-29 (DOC F) thru DOC C and D. TVA class is found on the FD (represented by DOC A).

N/A	Lee F. Gaser	12/18/85	Daryl W. Bryan	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5796

(1) Design Statement No.

SQN-62-02

SQM 023

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The design codes of the components in the system (chemical and volume control system) are given (by appropriate safety class) in Section 3.2" (Table 3.2.2-2)

(4) FSAR Section
9.3.4 (and continued in)
3.2 thru 3.2.2.5

(5) FSAR Page
9.3-13 (and continued in)
3.2-1 thru 3.2.4 and FSAR Table 3.2.2-2

(6) Design Documents
(A) 47W809-1 (CVCS - FD)
(B) 47W406-1 (CVCS piping series)
(C) 47W406-4 R11
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W406-6 R12

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to appropriate design codes and to Fig. 9.3.4-1 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D which refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required on DOC G of the 47W406 series (DOC B) are per the findings described herein, i.e., DOC G refs G-29 (DOC F) thru DOC C and D. TVA class is found on the FD (represented by DOC A).

N/A	Lee F. Gaser	12/18/85	C. W. Perkins	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment H
Page 104 of 108

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5456

(1) Design Statement No.

SQN-62-3

SQM 024

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR: "The design codes of the components in the system (chemical and volume control system) are given (by appropriate safety class) in Section 3.2" (Table 3.2.2-2)

(4) FSAR Section
9.3.4 (and continued in)
3.2 thru 3.2.2.5

(5) FSAR Page
9.3-13 (and continued in)
3.2-1 thru 3.2.4 and FSAR Table 3.2.2-2

(6) Design Documents
(A) 47W809-1 (CVCS - FD)
(B) 47W406-1 (CVCS piping series)
(C) 47W406-4 R11
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W406-1 R16

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to appropriate design codes and to Fig. 9.3.4-1 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. DOC D which refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures required on DOC G of the 47W406 series (DOC B) are per the findings described herein, i.e., DOC G refs G-29 (DOC F) thru DOC C and D. TVA class is found on the FD (represented by DOC A).

N/A	Lee F. Gaser	12/21/85	J. L. Purkey	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5095

(1) **Design Statement No.**
SQN-62-4

SQM 025

(2) **Responsible Group/Section** SQN Mechanical Group Section #3

(3) **Design Statement as Presented in FSAR** "The design codes of the components in the system (chemical and volume control system) are given (by appropriate safety class) in Section 3.2" (Table 3.2.2-2).

(4) **FSAR Section**
9.3.4 (and continued in)
3.2 thru 3.2.2.5

(5) **FSAR Page**
9.3-13 (and continued on)
3.1-1 thru 3.2-4

(6) **Design Documents**
(A) 47W809-1 (CVCS - F.D.)
(B) 47W406-1 (CVCS Piping Series)
(C) 47W406-4 R11
(D) N2M-865 (Construction Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (Welding Procedures)
(G) 47W406-2 R15

(7) **Contact(s)**

(8) **DISPOSITION OF STATEMENT**

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) **DISCUSSION OF FINDING**

The FSAR refers to appropriate design codes and to Fig. 9.3.4-1 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs. to DOC D which refs to DOC E and ODC F both of which refer to design code requirements. Welding Procedures required for DOC C of the 47W406 series (DOC B) are per the findings described herein, i.e., DOC G refs G-29 (DOC F) thru DOC C & D. TVA class is found on the F.D. (represented here by DOC A).

N/A	Lee F. Graser	12/21/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5809

(1) Design Statement No.

SQN-63-01

SQM 026

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A,B,C, or D. ... The applicable codes used for the design, material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) FSAR Page
3.2-2 Fig. 6.3.2-1 (DOC A)
3.2-4
6.3-2 (Flow Diagram)

(6) Design Documents
(A) 47W811-1 (SIS F.D. Fig. 6.3.2-1)
(B) 47W435 Series (1,2, & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W435-6 R17

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refs. DOC B; DOC B has as part of its series DOC C; DOC C refs DOC D; DOC D ref DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are defined through DOC C. TVA class is shown on the F.D. (represented by DOC A) and ref. thru DOC B sheet 5 from DOC G.

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096018.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5095

(1) Design Statement No.

SQN-63-02

SQM 027

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A,B,C, or D. ... The applicable codes used for the design, material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) FSAR Page
3.2-2 Fig. 6.3.2-1 (DOC A)
3.2-4
6.3-2 (Flow Diagram)

(6) Design Documents
(A) 47W811-1 (SIS F.D. Fig. 6.3.2-1)
(B) 47W435 Series (1,2, & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W435-4 R13

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refs. DOC B; DOC B has as part of its series DOC C; DOC C refs DOC D; DOC D ref DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are defined through DOC C. TVA class is shown on the F.D (represented by DOC A).

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

018.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6176

(1) Design Statement No.

SQN-63-03

SQM 028

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A,B,C, or D. ... The applicable codes used for the design, material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) FSAR Page
3.2-2 Fig. 6.3.2-1 (DOC A)
3.2-4
6.3-2 (Flow Diagram)

(6) Design Documents
(A) 47W811-1 (SIS F.D. Fig. 6.3.2-1)
(B) 47W435 Series (1,2, & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W435-1 R23

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refs. DOC B; DOC B has as part of its series DOC C; DOC C refs DOC D; DOC D ref DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are defined through DOC C. TVA class is shown on the F.D. (represented by DOC A).

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096018.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6023

(1) Design Statement No.

SQN-63-04

SQM 029

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A,B,C, or D. ... The applicable codes used for the design, material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) FSAR Page
3.2-2 Fig. 6.3.2-1 (DOC A)
3.2-4
6.3-2 (Flow Diagram)

(6) Design Documents
(A) 47W811-1 (SIS F.D. Fig. 6.3.2-1)
(B) 47W435 Series (1,2, & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W435-11 R9

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refs. DOC B; DOC B has as part of its series DOC C; DOC C refs DOC D; DOC D ref DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are defined through DOC C. TVA class is shown on the F.D. (represented by DOC A) and ref thru DOC B sheet 5 from DOC G.

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5667

(1) Design Statement No.

SQN-63-5

SQM 030

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A,B,C, or D. ... The applicable codes used for the design, material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) FSAR Page
3.2-2 Fig. 6.3.2-1 (DOC A)
3.2-4
6.3-2 (Flow Diagram)

(6) Design Documents
(A) 47W811-1 (SIS F.D. Fig. 6.3.2-1)
(B) 47W435 Series (1,2, & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding Procedures)
(G) 47W435-6 R18

(7) Contact(s) _____

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refs. DOC B; DOC B has as part of its series DOC C; DOC C refs DOC D; DOC D ref DOC E and DOC F both of which refer to design code requirements. Welding procedures required for DOC G are defined through DOC C. TVA class is shown on the F.D. (represented by DOC A) and ref thru DOC B sheet 5 from DOC G.

N/A	Lee F. Gaser	12/21/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096018.04

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L-5275

(1) **Design Statement No.**

SQN-63-06

SQM 031

(2) **Responsible Group/Section** SQN - Mechanical Group #3

(3) **Design Statement as Presented in FSAR**

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A, B, C or D. ... The applicable codes used for the design material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in Table 3.2.2-1 and 3.2.2-2."

(4) **FSAR Section**

3.2-2
3.2.2.5
6.3.2.1 (Flow Diagram Ref)

(5) **FSAR Page** Fig 6.3.2-1 (DOC A)

3.2-2
3.2-4 6.3-2 (Flow Diagram)

(6) **Design Documents**

(A) 47W811-1 (CIS FD Fig. 6.3.2-1)
(B) 47W435 Series (1, 2 & 5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29M (Welding procesures)
(G) 47W435-4 R16

(7) **Contact(s)**

(8) **DISPOSITION OF STATEMENT**

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) **DISCUSSION OF FINDING**

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A) Flow Diagram). DOC A ref. DOC B; DOC B has as part of its series DOC C; DOC C refs. DOC D; DOC D refs DOC E and DOC F both of which refer to design code requirements. Welding procedures requred in DOC G are defined through DOC C. TVA lcass is shown on the FD (represented by DOC A).

N/A	Lee F. Graser	12/21/85	J. L. Burkey	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L5702

(1) Design Statement No.

SQN-63-07

SQM 032

(2) Responsible Group/Section SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Emergency Core Cooling System) have been classified by TVA as Class A, B, C, or D. ... The applicable codes used for the design material selection and inspection of components for the various safety classes (important to nuclear safety) are shown in Table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section

3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram Ref)

(5) FSAR Page (Fig. 6.3.2-1 (DOC A)

3.2-2
3.2-4 6.3-2 (Flow Diagram)

(6) Design Documents

(A) 47W811-1 (SIS FD Fig. 6.3.2-1)
(B) 47W435 Series (1, 2 &5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const Spec)
(E) SQN-DC-V-3.0 (design criteria)
(F) G-29M (welding procedures)
(G) 47W435-4 R14

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the Design Codes and to Fig. 6.3.2-1 (DOC A Flow Diagram). DOC A refers DOC B. DOC B has a part of its series DOC C; DOC C refs DOC D; DOC D refs DOC E and DOC E both of which refer to design code requirements. Welding procedures required in DOC G are defined through DOC C. TVA class is shown on the F.D. (represented by DOC A)

N/A	Lee P. Graser	12/21/85	J. L. Purkey	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6491

(1) **Design Statement No.**
SQN-67-03

SQM 033

(2) **Responsible Group/Section** SEQ Mechanical Group - Section #3

(3) **Design Statement as Presented in FSAR** Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code class C, ASME Section III, class 3.

(NOTE: ANSI B31.7 was applicable prior to implementation of ASME Section III, class 3)

(4) **FSAR Section**
9.2.2.2 (Flow Diagram)
9.2.2.8 (Code)

(5) **FSAR Page**
9.2-21&22 (Flow Diagram)
9.2-33 & 34 (Code)

FSAR Fig. 9.2.2-5

(6) **Design Documents**
Flow Diagram:
A. FSAR Figure 9.2.2-5
47W845-5 R7
A1. 47W845-5 R11
B. Piping Drawing:
47W450-1 R19
C. Piping Sys Classification:
47B16-2 R2
D. Piping Modif. Dwg: 47W450-11 R22

(7) **Contact(s)** _____

(8) **DISPOSITION OF STATEMENT**

Design Documents and FSAR Consistent | **Minor Inconsistencies Between FSAR and Design Documents** | **FSAR is not Consistent with Design Documents**

(9) **DISCUSSION OF FINDING**

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, DOC B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. S. Alley	12/19/85	C. W. Perkins	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5373

(1) Design Statement No.

SQN-67-04

SQM-034

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)
FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-5 R17

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/19/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6067

(1) Design Statement No.

SQN-67-06

SQM-035

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)

FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 & -22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-6 R18

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/19/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6429

(1) Design Statement No.

SQN-67-07

SQM-036

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram) → FSAR Fig. 9.2.2-5
9.2.2.8 (Code)

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing: 47W450-1 R19
(C) Piping Sys Classification 47B16-2 R2
(D) Piping Modif. Dwg: 47W450-4 R40

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/19/85	Lee F. Graser	12/20/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment B
Sheet 61 of 98

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6463

(1) Design Statement No.

SQN-67-08

SQM-037

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram) ← FSAR Fig. 9.2.2-5
9.2.2.8 (Code)

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1])47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-6 R22

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/19/85	Lee F. Graser	12/20/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6429

(1) Design Statement No.

SQN-67-09

SQM-038

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)

FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-6 R22

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/19/85	Lee F. Graser	12/20/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L6534

(1) Design Statement No.

SQN-67-12

SQM-039

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)

FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-4 R42

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/20/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment B
Sheet 24 of 98

020 07

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5009

(1) Design Statement No.

SQN-67-13

SQM-040

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)
→ FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-5 R16

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/21/85	Lee F. Graser	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5373

(1) Design Statement No.

SQN-67-14

SQM-041

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram) → FSAR Fig. 9.2.2-5
9.2.2.8 (Code)

(5) FSAR Page
9.2-21 & -22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-12 R12

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/21/85	Lee F. Graser	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5526

(1) Design Statement No.

SQN-67-15

SQM-042

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)
FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-17 R20

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C the piping system classification.

N/A	J. R. Alley	12/21/85	Lee F. Graser	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment B
Sheet 67 of 68

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5555

(1) Design Statement No.

SQN-67-16

SQM-043

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram) → FSAR Fig. 9.2.2-5
9.2.2.8 (Code)

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing: 47W450-1 R19
(C) Piping Sys Classification 47B16-2 R2
(D) Piping Modif. Dwg: 47W450-21 R23

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/21/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5009

(1) Design Statement No.

SQN-67-17

SQM-044

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)
→ FSAR Fig. 9.2.2-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing:
47W450-1 R19
(C) Piping Sys Classification
47B16-2 R2
(D) Piping Modif. Dwg:
47W450-9 R18

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/21/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment A
Sheet 1 of 1

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5009

(1) Design Statement No.

SQN-67-18

SQM-045

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR: Design code for applicable portions of the ERCW system piping and valves are designed to TVA Code Class C, ASME Section III, Class 3. (Note: ANSI B31.7 was applicable prior to implementation of ASME Section III, Class 3)

(4) FSAR Section
9.2.2.2.2 (Flow Diagram)
9.2.2.8 (Code)
FSAR Fig. 9.2.?-5

(5) FSAR Page
9.2-21 &-22 (Diagram)
9.2-33 & -34 (Code)

(6) Design Documents
(A) FSAR Figure 9.2.2-5 - 47W845-5 R7
(A[1]) 47W845-5 R11
(B) Piping Drawing: 47W450-1 R19
(C) Piping Sys Classification 47B16-2 R2
(D) Piping Modif. Dwg: 47W450-10 R22

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ASME Section III, Class 3, as applicable, for ERCW system. The FSAR references the flow diagram, document A. The flow diagram (DOC A) references the physical piping drawings, document B. DOC B references field erection in accordance with the welding process specification G-29 for piping Class C. G-29 references ASME Section III, Class 3. DOC B also references document C, the piping system classification.

N/A	J. R. Alley	12/21/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985 BCN 25106

Plant

(1) Design Statement No.
SQN-68-1

SQM 046

(2) Responeible Group/Section SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR (a) The piping in the RCS pressure boundary is safety Class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1.

(b) A piping and instrumentation Diagram of the reactor coolant system is shown on Figure 5.1-1.

(4) FSAR Section
(a) 5.5.3.1
(b) 5.1.2
Table 3.2.2-2

(5) FSAR Page
(a) 5.5-18 (b) 5.1-9

(6) Design Documents
A. Flow Diagram - FSAR Fig. 5.1.1 47W813-1
B. Piping Dwg: 47W465-1&6
C. TVA Piping System Classification 47B16-2
D. N2M-865-Construction Spec
E. Piping Mod. Dwg. - 47W465-7 R22

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The Flow Diagram (FD) (DOC A) is referenced in the FSAR (b). It (DOC A) references Physical Dwgs (DOC B) and piping system classification (DOC C). DOC B references Const. Spec (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements fpr fabrication. DOC E also defines pipe class.

N/A	Daryl W. Bryan	12/19/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6402

(1) Design Statement No.

SQN-68-2

SQM 047

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The piping in the RCS pressure boundary is safety class 1 and is designed and fabricated in accor e with USAS Power Piping Code B31.1.

b)A piping and instrumentation diagram of the Reactor Coolant System is shown on Figure 5.1-1.

(4) FSAR Section
a. 5.5.3.1
b. 5.1.2
c. Table 3.2.2-2

(5) FSAR Page
a. 5.5-18
b. 5.5-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Drawings 47W465-1 & -6
(C) TVA piping system class. 47B16-2
(D) Construction Spec N2M-865
(E) Piping Mod. Dwg. - 47W465-2 R29

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const. Spec. (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements for fabrication. DOC E references and defines the pipe class.

N/A	Daryl W. Bryan	12/19/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5106
FCR - 2492

(1) Design Statement No.

SQN-68-3

SQM 048

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The piping in the RCS pressure boundary is safety class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1.

b)A piping and instrumentation diagram of the Reactor Coolant System is shown on Figure 5.1-1.

(4) FSAR Section
a. 5.5.3.1
b. 5.1.2
c. Table 3.2.2-2

(5) FSAR Page
a. 5.5-18
b. 5.5-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Drawings 47W465-1 & -6
(C) TVA piping system class. 47B16-2
(D) Construction Spec N2M-865
(E) Piping Mod. Dwg. - 47W465-2 R27

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const. Spec. (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements for fabrication. DOC A defines the pipe class.

N/A	Daryl W. Bryan	12/19/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5197

(1) Design Statement No.

SQN-68-4

SQM 049

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The piping in the RCS pressure boundary is safety class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1.

b)A piping and instrumentation diagram of the Reactor Coolant System is shown on Figure 5.1-1.

(4) FSAR Section
a. 5.5.3.1
b. 5.1.2
c. Table 3.2.2-2

(5) FSAR Page
a. 5.5-18
b. 5.5-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Drawings 47W465-1 & -6
(C) TVA piping system class. 47B16-2
(D) Construction Spec N2M-865
(E) Piping Mod. Dwg. - 47W465-8 R2

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const. Spec. (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements for fabrication. DOC E defines the pipe class.

N/A	Daryl W. Bryan	12/22/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5095

(1) Design Statement No.

SQN-68-5

SQM 050

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The piping in the RCS pressure boundary is safety class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1.

b)A piping and instrumentation diagram of the Reactor Coolant System is shown on Figure 5.1-1.

(4) FSAR Section
a. 5.5.3.1
b. 5.1.2
c. Table 3.2.2-2

(5) FSAR Page
a. 5.5-18
b. 5.5-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Drawings 47W465-1 & -6
(C) TVA piping system class. 47B16-2
(D) Construction Spec N2M-865
(E) Piping Mod. Dwg. - 47W465-4 R13

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const. Spec. (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements for fabrication. DOC A defines the pipe class.

N/A	Daryl W. Bryan	12/22/85	J. R. Alley	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-2777 (FCRs 1699 R -1780)

(1) Design Statement No.

SQN-68-6

SQM 051

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a)The piping in the RCS pressure boundary is safety class 1 and is designed and fabricated in accordance with USAS Power Piping Code B31.1.

b)A piping and instrumentation diagram of the Reactor Coolant System is shown on Figure 5.1-1.

(4) FSAR Section
a. 5.5.3.1
b. 5.1.2
c. Table 3.2.2-2

(5) FSAR Page
a. 5.5-18
b. 5.5-9

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 5.1.1 47W813-1)
(B) Piping Drawings 47W465-1 & -6
(C) TVA piping system class. 47B16-2
(D) Construction Spec N2M-865
(E) Piping Mod. Dwg. - 47W465-8 R6

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 for RCS. The flow diagram (DOC A) is referenced in the FSAR (b). It (DOC A) references physical dwgs. (DOC B) and piping system classification (DOC C). DOC B references Const. Spec. (DOC D) N2M-865 which defines Const. Spec. G-29 as meets TVA requirements for fabrication. DOC E defines the pipe class.

N/A	Daryl W. Bryan	12/22/85	J. P. Alley	12/23/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment H
Sheet 96 of 98

19.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-6165

(1) Design Statement No.

SQN-70-01

SQM 052

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

The CCS is designed to remove residual and sensible heat from the Reactor Coolant (RC) system via the Residual Heat Removal System during plant cooldown; cool the spent fuel pit water and the letdown flow for the chemical and volume control system; provide cooling to dissipate waste heat from various plant components and provide cooling for safeguard loads after an accident.

(4) FSAR Section
9.2.1
9.2.1.2

(5) FSAR Page
9.2-1
9.2-3

(6) Design Documents
(A) 47W859-1 (FSAR FD Fig. 9.2.1-1)
(A1)47W859-1 (CCS FD for clarity)
(B) 47W464-1 (CSS Piping Dwg. - Notes)
(C) N2M-865 (Const Spec)
(D) 47W464-11 R33

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR includes CCS Flow Diagram (Fig. 9.2.1-1 DOC A) DOC A(A1) refs DOC B. DOC B refs const spec N2M-865 (DOC C). DOCS B & C ref the welding specs G-29. DOC D shows the changes made to the piping drawings under the ECN. The TVA pipe class is shown on the physical piping drawing 47W454-11 (DOC D).

N/A	J. L. Purkey	12/22/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5912

(1) Design Statement No.

SQN-70-02

SQM 053

(2) Responsible Group/Section: SQN - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

The CCS is designed to remove residual and sensible heat from the Reactor Coolant (RC) system via the Residual Heat Removal System during plant cooldown; cool the spent fuel pit water and the letdown flow for the chemical and volume control system; provide cooling to dissipate waste heat from various plant components and provide cooling for safeguard loads after an accident.

(4) FSAR Section
9.2.1
9.2.1.2

(5) FSAR Page
9.2-1
9.2-3

(6) Design Documents
(A) 47W859-1 (FSAR FD Fig. 9.2.1-1)
(A1)47W859-1 (CCS FD for clarity)
(B) 47W464-1 (CSS Piping Dwg. - Notes)
(C) N2M-865 (Const Spec)
(D) 47W464-2 R30, -13 R19

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR includes CCS Flow Diagram (Fig. 9.2.1-1 DOC A) DOC A(A1) refs DOC B. DOC B refs const spec N2M-865 (DOC C). DOC C refs the welding specs, G-29 along with DOC B. DOC D shows the changes made to the piping drawings per the ECN. TVA pipe class is shown in note 12 on physical piping drawing 47W464-1 (DOC B).

N/A	J. L. Purkey	12/22/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L5200
FCR 1362R1 & R2

(1) Design Statement No.

SQN-70-03

SQM 054

(2) Responsible Group/Section: SQN Mechanical Group Section #3

(3) Design Statement as Presented in FSAR:

The CCS is designed to remove residual and sensible heat from the reactor Coolant (RC) System via the Residual Heat Removal System during plant cooldown; cool the spent fuel pit water and the letdown flow for the chemical and volume control system; provide cooling to dissipate waste heat from various plant components, and provide cooling for safeguard loads after an accident.

(4) FSAR Section

9.2.1
9.2.1.2

(5) FSAR Page - 9.2-1
9.2-3

(6) Design Documents

(A) 47W859-1 (FSAR F.D. Fig. 9.2.1-1)
(A[1]) 47W859-1 (CCS F.D. for Clarity)
(B) 47W464-1 (CCS Piping Dwg. - Notes)
(C) N2M-865 (Const Spec)
(D) 47W464-3R27

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR includes CCS flow Diagram (Fig. 9.2.1-1 - DOC A). DOC A(A[1]) refs. DOC B. DOC B refs. Const Spec N2M-865 (DOC C). DOCS B&C ref. the welding specs G-29. DOC D shows the changes made to the piping drawing under the FCR and ECN. TVA Pipe Class is identified by note 12 on 47W464-1 (DOC B)

N/A	J. L. Purkey	12/22/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

SQN - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

Plant

ECN L5911

(1) **Design Statement No.**
SQN-78-01

SQM 055

(2) **Responsible Group/Section** SQEP Mechanical Group #3

(3) **Design Statement as Presented in FSAR** (a) The spent fuel pit cooling system, shown in Fig. 9.1.3-1... (b) Spent fuel pit cooling system codes and classifications are given in section 3.2. (c) Components...have been assigned classifications that range from Class E through Class V....The applicable codes...are shown in table 3.2.2-3.

(4) **FSAR Section**
(a) 9.1.3.2
(b) 9.1.3.2.1
(c) 3.2.2.6

(5) **FSAR Page** (a) 9.1-8
(b) 9.1-10 (c) 3.2-5 Table 3.2.2-3

(6) **Design Documents**
(A) Flow Diagram (FSAR 9.1.3-1 47W855-1)
(B) Piping Dwgs. 47W454-1 & -7
(C) N2M-865 - Construction Spec.

(7) **Contact(s)**

(8) **DISPOSITION OF STATEMENT**

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) **DISCUSSION OF FINDING**

The FSAR defines our TVA Class G commitment to ANSI B31.1. It references the flow diagram (DOC A) which references TVA class and physical dwg. (DOC B) which references Const. Spec. (DOC C) N2M-865 which defines Const Spec G-29 as meets TVA requirements. DOC B also references DOC A.

N/A	Daryl W. Bryan	12/21/85	L. L. Durkee	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6305

(1) Design Statement No.

SQN-HV-1

SQM 056

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-5 R45

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5599 (FCR-3033)

(1) Design Statement No.

SQN-HV-2

SQM 057

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-9 R29

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5573

(1) Design Statement No.

SQN-HV-3

SQM 058

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-12 R18

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5895

(1) Design Statement No.

SQN-HV-4

SQM 059

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-32 R12

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent (circled)

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

Attachment B
Page 86 of 98

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-5200

(1) Design Statement No.

SQN-HV-5

SQM 060

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-40 R8

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-2780 (FCR 2140)

(1) Design Statement No.

SQN-HV-6

SQM 061

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-42 R5

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5194

(1) Design Statement No.

SQN-HV-7

SQM 062

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR: The auxiliary building ventilation systems are shown on Figures 9.4.2-1.

(4) FSAR Section
9.4.2.2

(5) FSAR Page
9.4-13

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 9.4.2-1 47W866-2)
(B) Flow Diagram - 47W866-1
(C) Physical Dwg. - 47W920-1
(D) Const Spec - N2M-865
(E) Physical Mod Dwg 47W920-44 R0

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR references flow diagram (DOC A) which references flow diagram sheet 1 (DOC B). It in turn references physical dwg. (DOC C) which references const spec (DOC D) N2M-865 and gives TVA Class. DOC D references TVA class to applicable codes and const spec G-29 that meets TVA requirements.

N/A	Daryl W. Bryan	12/21/85	J. L. Purkey	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

SQN - **FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985**

Plant

ECN L-5200

(1) **Design Statement No.**
SQN-87-01

SQM 063

(2) **Responsible Group/Section** SQN - Mechanical Group #3

(3) **Design Statement as Presented in FSAR** "Fluid system components for the Sequoyah Nuclear Plant that are important to Nuclear Safety (Emergency Core Cooling System) have been classified by TVA as Class A, B, C, or D...The applicable codes used for the design, material selection, and inspection of components for the various safety classes (important to Nuclear Safety) are shown in Table 3.2.2-1 and 3.2.2-2."

(4) **FSAR Section**
3.2.2
3.2.2.5
6.3.2.1 (Flow Diagram)

(5) **FSAR Page** 3.2-2
3.2-4
6.3-2 (flow diagram) Figure 6.3.2-1 (DOC A)

(6) **Design Documents**
(A) 47W811-1 (SIS FD Fig. 6.3.2-1)
(B) 47W435 Series (1,2 &5 SIS Piping)
(C) 47W435-18 (SIS/UHI Piping)
(D) N2M-865 (Const. Spec.)
(E) SQN-DC-V-3.0 (design criteria)
(F) G-29M (welding procedures)
(G) 47W435-19 R21
(H) 47W811-2 (UHI Flow Diagram)

(7) **Contact(s)** _____

(8) **DISPOSITION OF STATEMENT**

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) **DISCUSSION OF FINDING**

The FSAR refers to the design codes and to Fig. 6.3.2-1 (DOC A flow diag.). DOC A refs DOC B, DOC B has a part of its series DOC C; ODC C refs DOC D; DOC D refs DOC E and DOC F both of which refer to design code requirements. Welding procedures required in DOC G are defined through DOC C. TVA class is ref. on the Flow Diagram. DOC A from output DOC G thru DOC B sheet 5 or DOC C.

N/A	Lee F. Graser	12/22/85	C. W. Perkins	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-6183

(1) Design Statement No.

SQN-03-08

SQM 064

(2) Responsible Group/Section: SQN - Mechanical Group Section #3

(3) Design Statement as Presented in FSAR: "The industry codes and standards and seismic classification corresponding to these TVA classifications (from Fig. 10.4.7-12 SQN FSAR) are given in Table 3.2.2-1." (For the aux. feedwater system)

(4) FSAR Section
10.4.7.2
10.4.7.2.3

(5) FSAR Page
10.4-30
10.4-38 & 42

(6) Design Documents
(A) 47W803-2 (Aux. Fdwtr. Syst. FD)
(B) 47W417-1 (Aux. Fdwtr. Piping Series)
(C) 47W427-7 R16 (A.F.W. Piping Dwg)
(D) N2M-865 (Construction Spec)
(E) SQN-DC-V-3.0 (Design Criteria)
(F) G-29 (welding procedures)
(G) 47W427-1 R18

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to the design codes and to Fig. 10.4.7-12 (DOC A); DOC A refs. DOC B; DOC B refs. DOC C; DOC C refs DOC D; DOC D refs. DOC E and DOC F both of which refer to design code requirements. Welding procedures (G-29) required for DOC G are ref. thru DOC B and C. TVA class is ref. on the FD (represented by DOC A) from output DOC thru DOC B.

N/A	Lee F. Graser	12/18/85	C. W. Perkins	12/19/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN L-6275

(1) Design Statement No.

SQN-01-7

SQM 065

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-4 R21
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B2 shows pipe class.

N/A	C. W. Perkins	12/21/85	Daryl W. Bryan	12/21/85
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

ECN L-5540

(1) Design Statement No.

SQN-01-8

SQM 066

(2) Responsible Group/Section: SQEP Mechanical Group #3

(3) Design Statement as Presented in FSAR:

a) "...The remainder of the main steam supply system, all piping downstream of the main steam line isolation and check valves is designed to the requirements of TVA Class H (ANSI B31.1)"

b) "applicable codes,....are shown in Table 10.3.2-1."

c) "c...TVA Class H-Code, ANSI B31.1, Code for Pressure Piping."

(4) FSAR Section
a. 10.3.1 & 10.3.2.1
b. 10.3.2.2
c. Table 10.3.2-1

(5) FSAR Page
a. 10.3-1
b. 10.3-4
c. Table 10.3.2-1

(6) Design Documents
(A) Flow Diagram (FSAR Fig. 10.3.2.1 47W801-1)
(B) Piping Drawings 47W400-2 R23 & -4 R21 (B1) & -1 R17 (B2)
(C) Piping Sys. Classification 47B16-2
(D) Construction Spec N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR defines our commitment to design code ANSI B31.1 as applicable for the Class H portion of the main steam supply system. The FSAR refs. the flow diag., DOC A. The flow diag. refs. the piping drawings DOC B, and the piping system classification, DOC C. DOC B refs. construction spec N2M-865 for field fabrication and erection which in turn defines construction spec G-29 as meeting TVA requirements for fabrication. DOC B2 shows pipe class.

N/A	C. W. Perkins	12/22/85	Daryl W. Bryan	12/22/85
Coordinating Initials	Investigator	Date	Approver	Date

096019.04

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

(1) Design Statement No.

SQN-35-001

SQM 067

(2) Responsible Group/Section: SQN - Mechanical #3

(3) Design Statement as Presented in FSAR: (a) "The only portions of the hydrogen system which are safety-related (TVA safety Class G) are the piping, valves and instrumentation downstream of the secondary control station which controls the hydrogen supply to the volume control tanks."

(b) "The flow diagrams for this system are shown in figures 10.4.7-2 & 9.5.8-1.

(4) FSAR Section
(a) 9.5.8.3
(b) 9.5.8.5

(5) FSAR Page
(a) 9.5-23
(b) 9.5-23

(6) Design Documents
(A) 47W849-1 - FD
(B) 47W830-6 - FD
(C) 47W809-1 - FD
(D) 47W406 - Series
(E) N2M-865

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

FSAR gives us TVA Class G and references Fig. 9.5.8-1 (DOC A) which references DOC B which in turn references DOC C. DOC C references DOC D (physical dwg.) which shows piping on sheet 3 and on sheet 4 references DOC E which references the G-29 welding spec.

N/A	Daryl W. Bryan	1/14/86	C. W. Perkins	1/15/86
Coordinating Initials	Investigator	Date	Approver	Date

Attachment II
Sheet 30 of 98

ATTACHMENT A

Sequoyah Plant - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985

(1) Design Statement No.

SQN-32-1

SQM-068

(2) Responsible Group/Section: Sequoyah Mechanical #3

(3) Design Statement as Presented in FSAR: See ..... figures 9.3.1-5 and 9.3.1-6 for the detailed flow diagrams.

(4) FSAR Section
9.3.1-5

(5) FSAR Page
9.3-6

(6) Design Documents
(A) 47W848-1 - Fig. 9.3.1-6 (SD)
(B) 47W600-121
(C) 47W600-24

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

(Design Documents and FSAR Consistent) | Minor Inconsistencies Between FSAR and Design Documents | FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR refers to DOC A (flow diagram for compressed air) which refers to physical dwg. DOC B. DOC C which is not referenced by DOC B, but is a part of the dwg. series, instructs you to use G-29. DOC B also gives TVA Class C.

N/A	Daryl W. Bryan	1/15/86	C. W. Perkins	1/16/86
Coordinating Initials	Investigator	Date	Approver	Date

Attachment H
Sheet 93 of 98

096018.04

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN N/A

(1) Design Statement No.

SQN-72-01
(Containment Spray)
SQM-069

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (e.g., containment spray) have been classified by TVA as Class A, B, C, or D, ... the applicable codes used for the design material selection and inspection of components for the various safety classes are shown in Table 3.2.2-1 and 3.2.2-2." "The flow ... diagrams for this system are presented in Figures 6.2.2-2 through 6.2.2-4."

(4) FSAR Section
3.2.2
3.2.2.5
6.2.2.2 (Flow diagram figure ref.)

(5) FSAR Page
3.2-2 6.2-89
3.2-4

(6) Design Documents
(A) 47W812-1 (FD Figure 6.2.2-2 from FSAR)
(B) 47W437 series (Piping Dwgs.)
(C) N2M-865 (Const. Spec.)
(D) 47B16-2 (Class/Code Dwg.)
(E) G-29 (Welding related Procedures)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR table 3.2.2-2 ref. ASME III-2 codes for TVA Class B piping through N2M-865 (DOC C) TVA's output documents (DOC B) also reference ASME III-2 for Class B piping. TVA's output (DOC B) also references DOC D for codes and classes and G-29 (DOC E) for welding procedures applicable. The FSAR "flow diagram" DOC A does ref. the physical series DOC B.

N/A	Lee F. Graser	1/20/86	D. W. Bryan	1/21/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN N/A

(1) Design Statement No.

SQN-18-01
(Fuel Oil)
SQM-070

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"The design code requirements for the system ... (for) piping... ANSI B31.1, 1967"

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (fuel oil system) have been classified by TVA as Class A, B, C, and D,...the applicable codes used for the design, material selection and inspection of components for the various safety classes are shown in Table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section

3.2.2 9.5.4.1
3.2.2.5
9.5.4.2 (Flow diagram figure ref.)

(5) FSAR Page

3.2-2
3.2-4
9.5-18

(6) Design Documents

(A) 47W840-1 (FD Figure 9.5.4-1 from FSAR)
(B) 17W311 series (Fuel Oil Piping)
(C) N2M-865 (Const. Spec.)
(D) 47B16-2 (Class/Code Dwg.)
(E) G-29 (Welding related Procedures)

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR table 3.2.2-2 ref. ASME III-3 codes for TVA Class C piping. Local knowledge is required to reach N2M-865 (DOC C) and the class/codes dwg. (DOC D), from TVA's physical dwgs. (DOC B). DOC C (part of TVA's output documents) references ASME III-3 for TVA Class C piping. The FSAR "flow diagram" (DOC A) does reference the physical series (DOC B).

N/A	Lee F. Graser	1/20/86	C. W. Perkins	1/21/86
Coordinating Initials	Investigator	Date	Approver	Date

ATTA. ENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN N/A

(1) Design Statement No.

SQN-61-01
(Ice Condenser)

SQM-071

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Design criteria & codes...(for Ice Condenser System)...

refrigeration piping...ANSI 31.5"

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Ice Condenser System) have been classified by TVA as Class A, B, C, or D, ... the applicable codes used for the design material selection and inspection of components for the various safety classes are shown in Table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
6.5.1.1
3.2.2
3.2.2.5 Fig. 6.5.6-1 (Refrigerant Cycle Dwg.)

(5) FSAR Page
6.5-1
3.2-2
3.2-4

(6) Design Documents
(A) Figure 6.5.6-1 (FSAR Ref. Cycle Dwg.)
(B) 47W814 (TVA F.D.)
(C) 47W462 (Physical dwg. series)
(D) N2M-865
(E) 47B16-2 (Class/Codes dwg.)
(F) G-29
(G) SQN-DC-V-3.0

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR table (3.2.2-2) references ASME III-2 for TVA Class B piping, and it also refs. ANSI B31.5 for refrigeration piping. TVA's output (DOC C) refs. ASME III-2 for Class B through DOC E and it also refs. the DC (DOC G) for piping (SQN-DC-V-3.0). DOC G Local knowledge is required to proceed from DOC C to the output document N2M-865 (DOC D) which references G-29 (DOC F) for welding procedures & B31.5 for refrigeration piping. Local knowledg is required to proceed from the FSAR to the system flow diagram or to the physical dwg. series.

N/A	Lee F. Graser	1/20/86	C. W. Perkins	1/21/86
Coordinating Initials	Investigator	Date	Approver	Date

020.07

ATTACHMENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN N/A

(1) Design Statement No.

SQN-74-01
(RHR)

SQM-072

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Component codes and classifications (for RHR) are given in section 3,2,.."

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (RHR System) have been classified by TVA as Class A, B, C, or D, ... the applicable codes used for the design,material selection and inspection of components for the various safety classes are shown in Table 3.2.2-1 and 3.2.2-2."

(4) FSAR Section
5.5.7.2.1 5.5.7.2
3.2.2
3.2.2.5 (Flow Diagram Figure Ref.)

(5) FSAR Page
5.5-27 5.5-25
3.2-2
3.2-4

(6) Design Documents
(A) 47W810-1 (FD Fig. 5.5.7-1 From FSAR)
(B) 47W432 (Physical Series)
(C) N2M-865 (Const Spec)
(D) 47B16-2 (Class/Codes dwg.)
(E) G-29

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR table (3.2.2-2) references ASME III-1 for TVA Class A piping. TVA's output documents (DOC B) also ref. ASME III-1 for Class A piping. TVA's output (DOC B) also ref. DOC D for classes and codes and G-29 (DOC E) for welding procedures applicable. Local knowledge is required to proceed from the FSAR "Flow Diagram" (DOC A) to the physical dwg. series (DOC B).

N/A	Lee F. Graser	1/20/86	D. W. Bryan	1/21/86
Coordinating Initials	Investigator	Date	Approver	Date

096020.07

ATTA. ENT A

Sequoyah - FSAR/COMMITMENT CONSISTENCY REVIEW FORM - 1985
Plant

ECN N/A

(1) Design Statement No.

SQN-82-01
(Diesel Gen. System)
(Starting Air)
SQM-073

(2) Responsible Group/Section: Sequoyah - Mechanical Group #3

(3) Design Statement as Presented in FSAR:

"Fluid system components for the Sequoyah Nuclear Plant that are important to nuclear safety (Diesel Gen. System) have been classified by TVA as Class A, B, C, or D,... the applicable codes used for the design material selection and inspection of components for the various safety classes are shown in Table 3.2.2-1 and 3.2.2.-2."

(4) FSAR Section
9.5.6
3.2.2
3.2.2.5
Fig. 9.5.6-1
(Flow Diagram Figure Ref.)

(5) FSAR Page
3.2-2
3.2-4
9.5-21

(6) Design Documents
(A) 47W839-1 (FD Fig. 9.5.6-1 From FSAR) (and sheet 2)
(B) 17W586 (piping series)
(C) N2M-865 (Const Spec)
(D) 47B16-2 (Class/Codes dwg.)
(E) Appendix E
(F) G-29

(7) Contact(s)

(8) DISPOSITION OF STATEMENT

Design Documents and FSAR Consistent

Minor Inconsistencies Between FSAR and Design Documents

FSAR is not Consistent with Design Documents

(9) DISCUSSION OF FINDING

The FSAR table (3.2.2-2) references ASME III-3 for TVA Class C piping. Local knowledge is required to proceed from DOC B to the output documents C & D which references ASME III-3 for TVA Class C. DOC C (N2M-865) also refs. G-29 for welding procedures (DOC F). TVA's output DOC B refs. Appendix E (DOC E) which is the predecessor of N2M865 (DOC C) for code specification.

N/A	Lee F. Graser	1/20/86	C. W. Perkins	1/21/86
Coordinating Initials	Investigator	Date	Approver	Date

020.07

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

4.0 CONSTRUCTION REPORT

TVA WELDING PROJECT
PHASE I REPORT
SEQUOYAH NUCLEAR PLANT

4.0 CONSTRUCTION REPORT
TABLE OF CONTENTS

		PAGE
I.	EXECUTIVE SUMMARY	1
II.	SCOPE AND PURPOSE OF REPORT	2
III.	OVERVIEW OF WELDING PROGRAM INCLUDING PROCEDURAL COMPLIANCE ASSESSMENT	3
	A. OVERVIEW OF SQN PROGRAM	
	B. COMPLIANCE WITH ANSI N45.2.5.	
IV.	GENERAL DESCRIPTION OF CONSTRUCTION WELD MONITORING PROGRAM WITH DATA ON COMPLETED WELDS	7
	A. DESCRIPTION OF WELD MONITORING PROGRAM	
	B. STATISTICS DERIVED FROM WELD MONITORING PROGRAM	
V.	RESULTS OF "QUALITY INDICATOR" ANALYSIS	8
	A. INTRODUCTION AND BACKGROUND	
	B. ANALYSIS OF QUALITY INDICATORS	
	C. CONCLUSIONS APPLICABLE TO ANALYSIS OF CONSTRUCTION PHASE QUALITY INDICATORS	
VI.	EVALUATION OF EMPLOYEE CONCERNS	11
	A. OVERVIEW AND GENERAL DISCUSSION	
	B. EVALUATION OF GENERIC CONCERNS	
	C. EVALUATION OF SPECIFIC CONCERNS	
VII.	OVERALL ASSESSMENT	12
VIII.	RECOMMENDATIONS AND CONCLUSIONS	13
	APPENDIX A - LIST OF SQN WELDING-RELATED PROCEDURES, INSTRUCTIONS, AND PRACTICES	
	APPENDIX B - "WELDING PROJECT PROCEDURE" WP QC 1.0 R0	
	APPENDIX C - QUALITY INDICATOR GRAPHS	
	APPENDIX D - DETAILED EVALUATION OF SQN EMPLOYEE CONCERNS	
	APPENDIX E - COMPLETE TEXT OF EMPLOYEE CONCERNS FOR SQN	

SEQUOYAH CONSTRUCTION WELDING
PROGRAM REPORT

PHASE I - PROGRAM ADEQUACY

I. EXECUTIVE SUMMARY

The Welding Project (WP) has evaluated the welding program and associated quality assurance program elements related to welding (hereinafter referred to as the welding quality assurance program) utilized by the Division of Construction, which is now the Office of Construction (OC), at SQN during the construction era. This program adequately addresses the regulatory commitments in place during the construction era at SQN. This premise is supported in this report in total.

The quality indicator analysis has determined that there were weaknesses in the areas of training, in-process welding documentation generation and handling, implementation of procedures, and design output documents. This information is given to provide a baseline for evaluation of subsequent programs such as the Nuclear Operations (NO) programs at BFN, SQN, and WBN and the OC programs at WBN and BLN.

This analysis also revealed the following specific programmatic problem areas:

1. Lack of understanding/comprehension of overall program operation by personnel within the program.

2. Cumbersomeness and/or lack of definitive instruction in implementing procedures. These two problem areas will be considered in the evaluation of the ongoing programs at WBN and BLN.

3. Inconsistencies in welding requirements specified on design output documents. This problem will be coordinated with OE and required corrective actions developed jointly between OC, OE and NO.

Three additional issues have been raised by concerned individuals and the Employee Concerns Program concerning SQN. They are as follows: (1) Concerns over SQN compliance with ANSI N45.2.5 regarding the inspection of Category I structures, components, and features; (2) Employee Concerns over possible inspections of welds after painting; and (3) Employee Concerns over foremen performing quality inspections of welds in violation of QA Topical Report (TVA-TR75-1A) requirements.

SQN did, in fact, have a welding inspection program which complied with the requirements of ANSI N45.2.5 from 1974 until the end of construction in 1980. Welds in structural steel, miscellaneous steel, and hanger components were, in fact, inspected and documented in accordance with the program requirements outlined in ANSI N45.2.5.

Several Employee Concerns have raised the issue of possible inspection of welds after painting at SQN. Visual inspection of welds at SQN was performed prior to painting. The Process Specification allowing the practice of inspection after painting was issued after the completion of construction at SQN.

Two Employee Concerns have raised the issue of production foremen performing quality inspections on welds at SQN. This practice was not allowed at SQN during the construction era.

The most important conclusion derived, based upon the analyses described in this report, is that the TVA construction program had an effective welding quality assurance program in place during the construction era which produced welds meeting the specified quality requirements. This program contained the required quality assurance elements which documented procedural noncompliances and hardware nonconformances and assured that appropriate dispositions and corrective actions (including retrofit) were effectively implemented through this program.

II. SCOPE AND PURPOSE OF REPORT

The WP has been given the responsibility to evaluate the existing condition of the overall TVA welding program to determine deficiencies and weaknesses, and to take corrective actions necessary to correct identified deficiencies and weaknesses. The OC effort consists of evaluation of site procedures which were used at SQN. OC has also been given the responsibility for overall quality indicator assimilation and analysis because the bulk of the data has been generated by OC programs. This data was shared with the Office of Engineering (OE) and NO representatives, and conclusions and recommendations was formulated collectively by OC, NO, and OE.

The WP has specifically designed the quality indicator assimilation and analysis methods to point out possible deficiencies and problems in the various welding programs. The quality indicator data generally focuses on in-process deficiencies, errors and/or defects and, as such, provides an effective vehicle for identifying root causes, and developing refinements and corrective actions for the welding quality assurance program. This data, however, is not useful in evaluating the as-built quality except that it does demonstrate that there was, in fact, an effective quality program in place. This program reported even minor noncompliances and caused the required corrective actions (including retrofit, and generic implications, where necessary) to be implemented. The presence of this body of quality indicators is a positive indication of the effectiveness and scope of the welding quality assurance program.

This review has utilized personnel resources drawn from OC staff personnel, OC site personnel, OE staff personnel, NO staff personnel, and qualified personnel from other offices and divisions.

Individuals assigned to the WP have broad experience and backgrounds in welding engineering, quality control, and quality assurance. They come directly from project and staff positions in the engineering, quality control, and quality assurance organizations in OE, OC, and NO.

PERSONNEL INVOLVED IN PREPARATION OF THIS REPORT:

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III. OVERVIEW OF WELDING PROGRAM INCLUDING PROCEDURAL COMPLIANCE ASSESSMENT

A. OVERVIEW OF SQN PROGRAM

The major construction effort was complete at SQN in 1980 and the units have been licensed for commercial operation. The welding program was analyzed in overall terms to obtain a baseline for subsequent analysis of the SQN-NO program which reflects the current practice. The program was reviewed only to assure that the necessary elements of control were included in the welding quality assurance program.

A general overview of the welding program used during the construction phase can be used to illustrate the program and its control features. An integrated system of corporate level specifications and site implementing procedures was designed (1) to assure that commitments and regulatory requirements were satisfied and (2) to verify that the necessary welding quality was achieved at the plant.

The requirements of these specifications were implemented by the use of a series of site-level construction procedures, inspection instructions, and standard operating procedures. The use of this integrated program assured that each phase of work involved in the production of welds and attendant inspections was controlled. The following description points out the major elements of the program and its control features.

Base metals and welding materials were controlled from procurement through final use including receipt, storage, issue and in process fabrication. Low-hydrogen electrodes were issued in portable heated containers. Welders were trained, tested, qualified, certified, and then had their welder qualification continuity maintained as required. Welds were made by qualified welders whose certifications were verified on a continuous basis. Only qualified welders could obtain welding filler material. Welding was performed to qualified welding procedures which were assigned by experienced welding engineering personnel. Welding inspections were assigned, conducted, evaluated, and documented by certified inspectors independent of the construction department, as required by various code commitments and regulatory requirements. The welding program was audited by both internal and external auditing and regulatory bodies.

A daily surveillance program was maintained throughout the plants' construction phase. This program required that welding/NDE personnel, independent of the constructing department, from each work area (from four to eight work areas were designated at various times) to perform, at random, two separate welding surveillances on each shift that welding operations were being conducted. The surveillances verified and monitored in-process welding operations for program elements such as welding procedure compliance, electrode control, and workmanship.

As an example of this surveillance method, during a 30-day month when welding was being performed six days a week in four work areas on day shift and in two areas on evening shift, 308 separate welding operations would be extensively examined while in progress. These examinations included welder identification, the feature being welded, and the Detail Welding Pocedure being used. Adherence to the Detail Welding Procedure Specification for each examined weld was verified by confirming that the major process variables such as fit-up, preheat, purge gas, welding amperage, and welding material were correct and within the limits specified. Adherence to the welding materials control requirements was verified by determining that the portable welding electrode ovens were in use and properly functioning and that welding rods and stubs were being properly controlled in the area of each examined weld. The welder's weld rod requisition was checked to verify that he had been issued the material he had been assigned to weld with and to assure that the material was correct as required by the Detail Welding Procedure being employed. The welder's certification and continuity records were verified as being correct and up to date for each examined weld. The welder's foreman was checked to verify that he had a copy of the Detail Welding Procedure in use available for the welder being examined. Any problem areas observed were documented and noted for resolution by the inspector's supervisor.

The surveillance inspections served as a major control feature for the Sequoyah construction welding progam. Other major control features included periodic audits and reviews of the overall program and specific portions of the program by onsite and offsite TVA quality assurance and NRC oversight organizations. After the identification of procedural deficiency problems in 1974, the overall quality indicator history of the Sequoyah welding program shows that corrective actions were implemented to correct identified deficiencies.

A review of the procedures in place during the post 1974 construction era (see Appendix A) indicates that they adequately addressed all the essential elements of a welding quality assurance program and fully complied with the code, standards, commitments, and regulatory requirements in effect during that era.

Analysis of the quality indicators for the construction phase supports the premise that there was a working welding quality assurance program during the construction era. Approximately 25 percent of the total indicators were in-process weld repairs. This points to an effective welding quality assurance program which was identifying, documenting, and specifying repair instructions, and correcting nonconforming conditions found during in-process inspections.

In summation, the welding operations conducted by TVA during the building of the Sequoyah Nuclear Plant were performed under a well-defined, integrated program which included adequate control of all phases of production, inspection, and documentation of welding operations. Overviews by quality assurance personnel ensured thorough review of procedures, adherence to procedures, review of results of inspections, and adequacy of documentation. The final results of this program are acceptable welds, made to controlled welding procedures by properly certified welders and properly inspected and documented by trained, qualified, certified inspectors who were independent of the organization performing the welding. Our analysis indicates that the commitments of the SQN construction era relative to control of welding were satisfied.

B. Compliance with ANSI N45.2.5

Several questions have been raised concerning the welding inspection and documentation of structural steel and miscellaneous steel features for SQN. Additional concerns have surfaced concerning construction phase compliance with ANSI N45.2.5-1974, "Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants." This standard was issued in November 1974. Among the members of the "Work Group on Quality Assurance Requirements for Civil and Structural Work" were Mr. C. Bonine and W. T. Quinn. Both were employed at the SQN site during this period and were responsible for the development of the inspection program for construction.

From the time of issue in 1974 through the end of construction in 1980, SQN Construction complied with the ANSI standard. Qualified welding procedures for structural and miscellaneous steel features were assigned by the Mechanical Engineering Unit (and later, the Weld Engineering Unit) in accordance with SNP Construction Procedure No. M-3, "Welding Surveillance and Weld Procedure Assignment." The Office and Civil Engineering Unit inspectors and Mechanical Engineering Unit (and later, the Welding Engineering Unit) inspectors performed the required welding inspections on structural and miscellaneous steel features as required by design drawings in accordance with SNP Construction Procedure No. C-2, "Fabrication and Erection of Structural Steel." These inspectors were independent of the erection department personnel who fabricated and/or erected these features. Inspectors performing nondestructive examination were certified in accordance with SNP Construction Procedure No. M-5, "Certification of Nondestructive Examination Personnel." Inspectors performing visual inspections on structural features were certified by the site QA unit by written and practical examination. These inspection personnel also performed daily surveillances of all work areas where fabrication and/or erection activities were in progress. These daily inspections were summarized and documented on Weekly Welding Surveillance Checklists in accordance with SNP Construction Procedure No. M-3, "Welding Surveillance and Weld Procedure Assignment." These surveillances were to monitor compliance with details of welding procedures, qualification of welders, control of filler metals, general workmanship, and other essential variables of the welding quality assurance program. Individual noncompliances were documented and reported to the organizations responsible for the work. Corrective actions, including retrofit, were taken as needed and to assure compliance with program requirements.

Hangers, duct supports, and conduit supports were handled similarly in accordance with the following SNP Construction Procedures: P-30, "Fabrication and Installation of Seismic Supports," M-23, "Fabrication, Installation, and Inspection of Heating, Ventilating, and Air Conditioning Duct Supports, and E-3, "Fabrication, Installation, Inspection, and Documentation of Seismic Supports for Conduit and Lighting Fixtures."

In summary, SQN Construction did, in fact, have a welding quality assurance program in place which programmatically addressed and complied with the provisions of ANSI N45.2.5-1974. This program produced welds which are in compliance with code, standard, and regulatory requirements. Required weld documentation was prepared in accordance with program quality assurance requirements.

IV. GENERAL DESCRIPTION OF CONSTRUCTION WELD MONITORING PROGRAM WITH DATA ON COMPLETED WELDS

A. DESCRIPTION OF WELD MONITORING PROGRAM

A computerized weld monitoring program was used to maintain status and to assimilate data on critical piping welds made in the primary fluid systems of the plant. These systems comply with ANSI B31.7 requirements, and all welds requiring quality assurance documentation are tracked in this system. The weld monitoring program provides a complete history of all weld repair activities on B31.7 systems and contains pertinent summary information on each weld and any repairs in the monitored system.

The weld monitor program uses a conservative approach to the compilation of both repair and cut-out rates. Pertinent points are as follows:

1. Reject rates are computed on a per weld basis, rather than by total inches of weld rejected versus total inches of weld completed. This means that any failed inspection (from fitup through a major weld repair) is considered a reject if any aspect of the required inspection is rejected. The weld reject may be as minor as simply requiring cosmetic grinding, or as important as a failed radiographic examination which would result in excavation and repair of a portion of the weld. Weld repairs requiring excavation are characteristically limited to a relatively small portion of a weld. For example, a six-inch pipe weld contains approximately 21 linear inches of weld and may require repair of a three-inch section. This amounts to a reject of only 14% of the weld. The QC system indicates that this weld is a 100% reject.

2. Cut-outs are defined as complete removals of welds. Cut-outs are also computed on a per weld basis. Cut-outs result from (1) design changes after initial construction installations are completed and (2) repairs to grossly defective welds where it is more economical to replace the weld in total than to excavate and repair several areas in the weld. Additionally, welds which failed fitup inspections before welding actually commences are also counted as cut-outs even though the weld joint is only tacked up and prepared for welding.

B. STATISTICS DERIVED FROM WELD MONITORING PROGRAM

Sequoyah totals represent the numbers of welds made in the construction phase only. They do not include welds, weld cut-outs, or weld repairs made by Nuclear Operations (NO) after startup.

1. Total Welds Completed

Unit 1 and Common	72,448
Unit 2	32,161
Total monitored welds	104,609

2. Total Number of Welds Cut-out 10,413
3. Total Number of Weld Repairs 6,166

TOTAL 16,579

4. Overall Weld Repair Rate 15.85%

This overall weld repair rate contains weld repairs for adding leg size to socket welds, cosmetic weld grinding performed on vendor weld for preservice inspection and extensive retrofit weld repairs made as the result of the 1974 stop work order.

V. RESULTS OF QUALITY INDICATOR ANALYSIS

A. INTRODUCTION AND BACKGROUND

The WP has performed an analysis of data extracted from QC, QE, and NO to determine overall welding program weaknesses. This data base is made up of in-process and overview type documents collected from QC, QE, and NO with the great bulk of them being QC-generated in-process documents. These documents or "quality indicators" best define the extent of compliance with the agency's overall welding program.

Employee Concerns are also included in this study to obtain additional data for overview and analysis purposes. These concerns reflect a different perception of issues and provide new insight for possible deficiencies.

It is important to recognize that the overall weld reject rate for SQN was 15.85%. This includes repairs and/or corrections to welds which were counted several times for the same completed weld. This is due to fit-up, in-process corrections and pre-service inspection preparations. The important issue is that the welding quality assurance program documented even the slightest deviation from the requirements and caused corrective actions to be taken.

The percentages and fractions mentioned in the quality indicator anaysis are high due to the fact that they are tracked as percentages of the total quality indicators analyzed. By design, this process magnifies problem areas and, as such, provides a clear method of identifying problem areas in the welding quality assurance program. If the total numbers of welds for the quality indicators considered for this program were analyzed against the total weld population of welds in the plant, the percentages would be extremely small.

As of January 17, 1986, the data base was approximately 95% complete. The data base considered in this report for SQN is 1242 items. Final evaluations will be addressed in the Sequoyah Phase II Report at the conclusion of Phase II.

The data was assembled and analyzed in accordance with the provisions of "Welding Project Procedure" WP QC 1.0 R0 (See Appendix B). Pertinent graphs are included in Appendix C.

B. ANALYSIS OF QUALITY INDICATORS

Initial analysis indicates that 53% of the data fell into Category 3 (see Appendix B for detailed description of categories) of our analysis as depicted in Figure 1 of Appendix C. Category 3 contains elements which reflect the day-to-day operations of the welding program which identify hardware noncompliant conditions requiring repairs by welding or other corrective methods and the attendant generation of documentation. The fact that this category is large indicates that a sound welding quality assurance program was in place during construction that did, in fact, identify, document, evaluate, and provide repair instructions where necessary for welds and welding-related activities found noncompliant during first line inspection. The detailed analysis by Hardware also supports this premise (Figure 4, Appendix C).

Category 6 of the initial analysis contains 35% of the data (also shown Figure 1, Appendix C). This category contains elements which reflect the overall program operation and the knowledge and perception of the workings of the program by individuals (craftsmen, quality control, and engineering).

A detailed analysis was performed in the areas of "materials and hardware," "implementation of the program," and "procedural adequacy and records." This process enhances the identification of potential program weaknesses (Figure 1A, Appendix C).

Detailed analysis of the quality indicators reveals the following program weaknesses. Approximately 3/4 of the data analyzed for overall program implementation category for SQN construction phase is in the "failure to follow procedure" classification (Figure 2, Appendix C). "Failure to follow procedure" indicators include many items such as by-passed inspection hold points, cosmetic grinding, misplaced records and other in-process type items common to the operation of welding quality assurance programs. It is important to note that all these conditions were discovered, dispositioned, corrected, and documented during the normal course of operation of the program. These items have had no detrimental effect on the completed hardware; and, in fact, indicate that the hardware had been correctly fabricated and/or installed. This points to possible areas of weakness as follows:

1. (a) Failure of individuals to properly comprehend or understand the importance of compliance with the requirements of the program and/or procedures. This premise indicates possible lack of adequate training or failure to communicate the importance of the quality program to individuals engaged in the activities in which the procedure(s)/program apply.

   (b) It also points to possible management inattention in these areas. Other possibilities also include the need for training of line managers and individual workmen in the overall program.

2. Attitude of individuals performing the individual tasks covered by the program/procedures. This premise could result from lack of management control and/or policies concerning individual task performance. This may indicate the need for a uniform administrative policy to remove problems such as inconsistent disciplinary action. There is also a need for a uniform administrative policy for rewarding of outstanding job performance.

3. The program and procedures were in some instances cumbersome and hard to intrepret or follow. Implementing procedures were written to the most stringent interpretation of upper-tier documents. Application of the ANSI QA standards did not consistently address the extent to which the requirements applied since the design output documents were nonspecific and vague as to implementing details. This necessitated a very conservative application of procedures and program.

The root causes for problems in overall Construction program and implementing procedures stem from a lack of detail as to specific requirements for inspection and details of record generation for specific structures, components, and systems. The implementing organization must have specific and accurate design output documents which clearly specify requirements in order to draft clear implementing procedures with definitive acceptance criteria and detailed records requirements. This indicates evidence of inconsistencies in the manner in which this information is formatted and transmitted on design output documents.

Approximately 2/3 of the data analysis for procedural adequacy and documentation is in the "in-process weld documentation/records handling" classification (Figure 3, Appendix C). This points to the following possible areas of weakness:

1. Possible lack of overall program training or communications between individuals within the program.

2. Possible procedural inadequacies as to clarity and detail in instructions. Although they may have been technically correct, procedures did not always fully communicate to the user in easily understood wording.

3. Possible problems in document handling and flow after the records are generated and are travelling through the system for filing.

C. CONCLUSIONS APPLICABLE TO THE ANALYSIS OF CONSTRUCTION PHASE QUALITY INDICATORS

The SQN-OC analysis provides a base-line for the evaluation of the SQN-NO program because this program is basically an extension of the SQN-OC program and, as such, shares many of the same potential problem areas. They both point to the same basic problems of lack of consistencies in design output documents, program understanding, communication, and

training. Corrective actions are not required to be initiated on the SQN-OC program because the construction phase is now complete and any additional construction will be done under the provisions of the SQN-NO program or a revised OC program which will reflect the current office-wide program and commitments.

VI. EVALUATION OF SQN EMPLOYEE CONCERNS

A. OVERVIEW AND GENERAL DISCUSSION

The WP has reviewed a total of 54 Employee Concerns involving SQN and the available investigative documents supplied to WP by Nuclear Safety Review Staff by January 12, 1986. Thirty-three of these concerns were considered as "generic" by the Milestone Review Committee. These "generic" concerns were categorized into groups and each group was considered by WP. There are twenty-one additional concerns identified specifically for SQN; they have been considered as a separate group by WP.

Two important issues have been raised thru the Employee Concerns Program at WBN which have potential for impact at SQN. They involve the issues of possible inspections of welds through paint and foremen performing quality inspections on in-process welds. These two issues are discussed in detail in relation to Employee Concern numbers WI-85-013-003, WI-85-041-006, WI-85-041-008, IN-85-458-001 and WI-84-041-008 on page 1 of Appendix D; and in relation to Employee Concern numbers SQM-5-001-001 and SQM-5-001-002 on pages 10 and 11 of Appendix D. As detailed in Appendix D, these two issues are not applicable to SQN due to the fact that the Process Specifications allowing these various practices were not issued until after completion of construction at SQN.

Additional Employee Concerns will be factored into an analysis as they become available and will be addressed in the Sequoyah Phase II Report.

B. EVALUATION OF GENERIC CONCERNS

WP has assembled the thirty-three concerns into 12 categories. They are discussed in these 12 categories due to their generic implications. The engineering evaluation and commentary on these concerns (as shown in Appendix D) discuss them as they apply to SQN. This report addresses the programmatic aspects of the concerns. The hardware implications will be addressed in Phase II which consists of an audit and reinspections.

Of the 33 generic concerns considered, 30 have no basis for application at SQN as detailed in Appendix D. Two of the remaining concerns deal with vendor welds (IN-85-127-001 and IN-85-007-003). These concerns will be addressed as part of the Employee Concerns Program. One concern addressed a design condition which is being evaluated (XX-85-086-002).

In summary, two actions are necessary to completely address the 23 outstanding generic concerns: (a) evaluate the condition of vendor welds, and (b) complete the engineering evaluation.

C. EVALUATION OF SPECIFIC CONCERNS

Twenty-one (21) specific concerns were considered in the detailed analysis. Details of the status are also included in Appendix D and are summarized below:

a. One concern has been previously identified in NO Audits.

b. Ten (10) concerns were investigated by NSRS/QTC and were not substantiated.

c. One concern is an acceptable practice.

d. Two (2) concerns are being investigated generically.

e. One concern needs more information for analysis. This should be provided by QTC.

f. One concern simply cannot be substantiated from the data available.

g. Two concerns are being evaluated by OE. A companion concern, XX-85-086-002, which is being evaluated by OE, has been investigated and substantiated by NSRS Report I-85-50-SQN.

h. Three (3) concerns are under investigation by ERT and the TVA Legal Department. A report is to be issued by 2/1/86.

The full text of SQN employee concerns and pertinent reports is contained in Appendix E.

VII. OVERALL ASSESSMENT OF SQN-QC

The WP analysis of activities indicates that a working welding quality assurance program which adequately addressed the construction era code, standard, and regulatory commitments was in effect at SQN. This program functioned in an acceptable manner throughout the construction era at SQN with the following problem areas noted:

A. Lack of understanding/comprehension of overall program operation by individuals.

B. Cumbersomeness and/or lack of definitive instructions in implementing procedures.

C. Inconsistencies in welding requirements specified on design output documents.

These problem areas had no effect on the final quality of the hardware at SQN. The problem areas simply caused the generation of in-process and overview corrective actions which addressed

in-process and overview corrective actions which addressed redundant conditions in the program.

The analysis of Employee Concerns for SQN has not revealed any programmatic deficiencies. Detailed review of the Employee Concerns for SQN has revealed no programmatic problems in the areas of inspections of welds through paint and foremen performing in-process welding inspections.

Review of the implementing procedures by OC and NO has determined that the program procedures addressed upper-tier commitment elements for the SQN construction era. This review also has verified that SQN did comply with ANSI N45.2.5 requirements.

VIII. RECOMMENDATIONS AND CONCLUSIONS

Due to the fact that OC has no ongoing construction effort at SQN, there is no need to make OC program changes at SQN. The observations in Section VII "Overall Assessment of SQN-OC" should be used as a baseline for gauging the SQN-NO program and subsequent OC programs at WBN and BLN.

It has also been determined that other issues such as foremen performing in-process inspections and inspections of welds after painting did not occur at SQN. Additionally, the WP has substantiated that SQN did, in fact, comply with ANSI N45.2.5 requirements for inspection of structural steel and miscellaneous steel features and hanger components in Safety Related Systems during the construction era.

The construction welding quality program at SQN was adequate to meet codes, commitments, and regulatory requirements.

LIST OF WELDING RELATED PROCEDURES, INSTRUCTIONS, & PRACTICES

WELDING RELATED PROCEDURES

Construction Procedures (Each of these procedures is prefixed by SNP)

C2 Erection And Inspection of Structual Steel
E3 Installation And Inspection of Seismic Supports for Conduit and Lighting Fixtures
G1 Fabrication and Installation of Seismic Supports
G3 Erection of Piping and Instrument Lines
G4 Surveillance of Site Contractors
I5 Fabrication and Installation, and Inspection of Seismic Instruction Line Supports and Wall Mounted Panels
M1 Procurement, Storage, Issue, and Control of Welding Materials
M2 Welder and Welding Operator Performance Qualification
M3 Welding Surveillance and Weld Procedure Assignment
M5 Certification of Nondestructive Examination Personnel
M7 Erection and Documentation Requirements for QA Piping Systems
M15 Post Weld Heat Treatment
M19 Cleanliness of Fluid System Piping and Components
M20 Pipe Support Installation and Documentation
M23 Fabrication, Installation, and Inspection of HVAC Duct Supports
M28 Arc Strike Removal
P2 Handling Nonconformances
CP3 Procurement, Storage, Issue, and Control of Welding Materials
P3 Reporting and Documenting Conditions Adverse to Quality
CP4 Welder and Welding Operator Performance Qualification
P8 Preparation, Review, Handling and Storage of QA Records
P9 Responding to NRC Inspection Items and QA Audit Findings
P10 Control of QA Documents
P11 Control and Documentation of Permanent Material Field Fabrications
P12 Storage of QA Material
P13 Release for Drilling, Chipping, Cutting, Welding, Sandblasting, and Rework of Permanent Structures
P14 Installation and Inspection of Embedded Material and Equipment
P16 Certification of Nondestructive Testing Personnel
P30 Fabrication and Installation of Seismic Supports
P33 Certification of Inspectors
P34 Heat Number Validation
P41 Handling Allegations
P48 Personnel QA Training
P50 Stop Work and Restart
W1 Procurement, Storage, Issue, and Control of Welding Material
W2 Welder and Welding Operator Performance Qualification
W3 Weld Procedure Assignment and Welding Surveillance
W4 Base Metal Repair

W5 Arc Strike Removal
W6 Post Weld Heat Treatment
W7 Repair of Welds

Inspection Instructions

II D5 Piping and Supports Walkdown Procedure
II 34 Surveillance of Contractor Site Activities
II 39 Heat code Transfer
II 41 Hydrostatic Test of Piping Systems
II 66 Inspection of Supports
II 67 Vaccum Box Testing
II 70 Inspection of Base Metal Repairs
II 71 Inspection of Post Weld Heat Treatment
II 72 Ferrite Content
II 73 Arc Strike Removal
II 74 Fitup and Cleanliness Inspection
II 75 Visual Examination of Weld Joints
II 76 Liquid Penetrant Examination
II 77 Magnetic Particle Examination
II 78 Ultrasonic Examination
II 79 Radiography Examination
II 85 Installation Verification and Pressure Test of Instrument Lines
II 91 Pneumatic Test of Piping Systems

Standard Operating Procedures

SOP 102 Conduit Hanger Installations
SOP 300 Reporting of Field Discrepancies
SOP 301 Qualification of Inspectors
SOP 302 Releases to Drill, Chip, Cut, Weld, or Sandblast
SOP 318 Resolving and Documenting Items Identified in NRC Exit Meetings or Inspection Reports
SOP 319 Work Suspension and Restart Procedure
SOP 321 Weld Map Status Program Operation and Maintenance
SOP 400 Mechanical Hanger Installation, Inspection, and Documentation
SOP 401 Weld Maps
SOP 405 Requirements for Pipe Bends, Threaded Pipe Connections, Weld Location, Piping Bolted Connections, and Valves
SOP 550 Review of QA Records
SOP 601 Receipt Inspection of Permanent Plant Material
SOP 650 Walkdown of Permanent Plant Features
SOP 700 Weld Surveillance
SOP 703 Welding Inspection Unit Weekly Report
SOP 704 Procurement of Welding Inspection Unit Materials
SOP 901 Supplementary Welding Instructions for Heavy Members

SPECIALTY PROCEDURES HAVING WELDING RELATED ASPECTS
(NOT LISTED IN MATRIX)

Construction Procedures

C11 Removal and Reinstallation of Reactor Vessel Supports
C14 Modification of Anchor Bolts for Reactor Coolant Pumps
C15 Modification of Anchor Bolts for Steam Generator
E9 Installation of Electrical Penetrations
I7 Installation of Incore Bottom Mounted Instrument Thimble Guide Tubes
M4 QC Surveillance of CVCS Holdup Tank Field Erection
M6 Field Surveillance of Containment Vessel Erection
M8 Erection and Inspection of Class 1 Cranes
M9 QC Surveillance of AERCW Cooling Tower Field Erection
M10 Erection and Inspection of Fuel Handling Facilities Stainless Steel Liners
M17 Erection and Documentation of Ice Condenser System
M21 Installation and Inspection Requirements for RPV Internals, RCP Internals, and CRD Mechanisms
M24 Installation, Inspection, and Documentation Requirements for UHI Water and Gas Accumulators
M25 QC Surveillance of Primary, Makeup, and Refueling Water Storage Tanks
M31 Erection and Documentation Requirements for Welded Attachments to Containment
M32 Erection of Spent Fuel Storage Racks
M35 Erection of New Fuel Storage Racks
M36 Mechanical Improvement Modification for Series 51 Steam Generators
P1 Preparation of QA Procedures
P31 ID and Marking of Permanent Materials

Inspection Instructions

II C5 Fire Protection System Mechanical Walkdown Inspection
II S6 Inspection of Attachments to Containment Vessels

TENNESSEE VALLEY AUTHORITY

OFFICE OF CONSTRUCTION

WELDING PROJECT PROCEDURE

No. WP OC 1.0 Rev. 0

TITLE: ASSEMBLING AND EVALUATING PROGRAM/PERFORMANCE INDICATORS

Revision	0			
Date	Jan. 27, 1986			
Initiator				
Independent Reviewer				
Project Engineer				
Project Manager				

1. PURPOSE

This procedure establishes the method for identifying and evaluating documented problems generated by various features of TVA's Quality Assurance Program (program indicators) in welding-related areas for the duration of the Welding Project (WP).

2. SCOPE

All program indicators (beginning with construction phase) which may have defined welding-related problems in TVA nuclear plants with an operating license or an active construction permit are within the scope of this procedure. Activities relating to identification of documents which identify welding-related problems, retrieval of these documents, classification of problems and dispositions, evaluation of problem areas/trends, and the reporting of evaluation results to the WP Project Manager, are addressed by this procedure.

3. DISCUSSION

The review required by this procedure is being performed to help in addressing NRC concerns as voiced in their letter to H. G. Parris on October 29, 1985 (reference 4.1).

4. REFERENCES

4.1 Letter from NRC to H. G. Parris dated October 29, 1985 (A02 851104 027).

4.2 Charter for TVA Welding Project.

5. DEFINITIONS

Program Indicators - Those documents listed on the attached document logic forms which provide information for analysis and classifying welding-related problems.

6. RESPONSIBILITIES

6.1 The OC Project Engineer (PE) is responsible for staffing the project for performance of retrieval, classification, and evaluation of program indicators.

6.2 The NO PE is responsible for providing to the OC PE any program indicators generated by NO.

7. PROCEDURE

7.1 Identification

7.1.1 Review site implementing procedure indexes for each site to identify those procedures which may have required the generation of documentation for problems.

7.1.2 Record the document type.

7.1.3 Review the associated implementing procedvre to determine if the document should be included in the WP evaluation.

7.1.4 If the document is not to be included in the classification effort, the justification for not classifying must be recorded on the document logic.

7.1.5 List on a per-plant-basis the documents which will be included in the evaluation. These lists shall be included in this procedure as Appendices A through D, titled "Document Logic"

7.2 Retrieval

7.2.1 OC-generated nonconformance reports at Sequoyah Nuclear Plant will be retrieved from the site records microfilm file.

7.2.2 OC-generated nonconformance reports at Watts Bar and Bellefonte Nuclear Plants will be retrieved from the site records, microfilm file, the RIMS correspondence file, or in hard copy from the site QA Records Unit.

7.2.3 OC-generated nonconfromance reports at Browns Ferry Nuclear Plant will be provided in hard copy by NO from the construction records file.

7.2.4 Reports to/from the NRC will be retrieved from the RIMS correspondence data base. OE NEB-NLS, or Nuclear Licensing Branch.

7.2.5 Documents generated by NO will be provided in hard copy.

7.2.6 OE nonconformance reports will be provided from either microfilm or in hard copy.

7.3 Classification

7.3.1 Review each document retrieved and determine the problem and the disposition.

7.3.2 Pick from Appendix E the single, most appropriate problem code and write it on the document.

7.3.3 Pick from Appendix F the single, most appropriate disposition code and write it on the document being reviewed.

7.3.4 Record the information as listed on Input Sheets (Attachment 1).

7.3.5 Submit the Input Sheets to OC MIS Unit for encoding.

7.4 Evaluation

7.4.1 As necessary, obtain summary printouts from OC MIS.

7.4.2 Evaluate the data obtained.

7.4.2.1 Prepare pie graph of problems in each of the six main headings shown in Appendix G.

7.4.2.2 Prepare a pie graph for each of the three main headings shown in Appendix E.

7.4.2.3 Evaluate the two sets of charts and prepare a narrative to explain the TVA perception of the problem areas.

7.4.3 Determine overall impact on program by obtaining:

7.4.3.1 Total number of monitored welds for each project

7.4.3.2 Total number of monitored welds repaired for each project

7.4.3.3 Total number of monitored welds cut out at each project

7.5 Reporting

Prepare a summary report each project and for the total agency.

8. DOCUMENTATION

8.1 All documents retrieved during the WP will be retained in Knoxville until Bellefonte unit 2 is licensed to operate.

9. ATTACHMENTS

9.1 Appendix A - Sequoyah Document Logic

9.2 Appendix B - Watts Bar Document Logic

9.3 Appendix C - Bellefonte Document Logic

9.4 Appendix D - Browns Ferry Document Logic

9.5 Appendix E - Problem Codes and Definitions

9.6 Appendix F - Disposition Code and Definitions

9.7 Appendix G - Problem Categories

9.8 Attachment 1 - Input Sheet

SEQUOYAH - DOCUMENT LOGIC

I. OC

A. In process reports of conditions adverse to quality:

1. Nonconforming Material Reports (NMR) - except those NMRs without suffix R written prior to October 4, 1976. These document receiving inspection only. Source: SNP P-2 R0 to R5.

2. Nonconforming Condition Reports (NCR) - Source: SNP P-2R6 to current.

3. Reports of Adverse Conditions (RAC) - Source: SNP P-3

4. Inspection Rejection Notices (IRN) - these were not considered since they are primarily a communications tool used to inform craft employees of a failed inspection. Source: SNP P-52

5. Report of Adverse Condition Potentially Reportable as a Significant Condition Under Reporting Requirements of 10 CFR 50.55(e) (SCR) - Source: SNP P-3

6. Stop Work Orders (SWO) - Source: SNP P-50

7. Base Metal Repairs - These were not considered since they are process control documents. Source: SNP II-70

8. Arc Strike Removal Forms - These were not considered since they are generated as a result of other nonconformance reports. Source: SNP M-28, SNP W-5, SNP II-73

9. Weld Repair Records - These were not considered since they are process control documents. Source: SNP W-7

10. Welding Surveillance Weekly Report - These were not reviewed since the deficiencies identified during a surveillance were required to be reported on a nonconformance report. Source: SNP W-3

11. Design Deviation Request (CDE) - Source: SNP P-5

12. Procedure Deviation Requests (PDR) - Classification includes procedure Addition Requests. Source: SNP P-1

13. 50.55(e) Items(E)

B. Overview Problems:

1. NRC identified

a. Violations - Early classification (VIO)

b. Violations - Recent classification - level I (V1), Level II (V2), Level III (V3), Level IV (V4), Level V (V5), and Level VI (V6).

c. Deviations (DEV)

d. Deficiencies (DEF)

e. Infraction (INF)

f. Unresolved Items (URI)

g. Inspector Follow-up Items (IFI)

h. NRC Confirmation of Action Letters (CAL)

2. TVA Internal

a. Construction QA Audit Findings or Deviation Reports (CQA)

b. OEDC QA Audit Findings (EQA)

c. Joint QA Audit Findings (JQA)

d. Office of QA Audit Findings (OQA)

e. NSRS Findings - Requirements (R), Enhancements (H), and General (G)

C. Concerns

1. QTC/ERT Employee Concerns(EC)

2. Allegations (ALG) - Source: SNP P-41

II. NO

A. In-process reports of conditions adverse to quality:

1. Discrepancy Reports (DR)

2. Corrective Action Reports (CAR)

B. Overview Problems:

1. NRC Identified (See I.B.1 for types)

2. TVA Internal:

a. NSRS (See I.B.2.e for types)

b. NO QA Audit Findings (PQA)

3. INPO (8)

C. Concerns:

1. QCT/ERT Employee Concerns (EC)

III. OE

A. In-process reports of conditions adverse to quality:

1. Nonconformance Reports (NCR)

2. OE Problem Identification Reports (PIR)

3. OE Significant Condition Reports (SCR)

4. OE Preop Test Deficiency Reports (PTD)

5. OE Design Deficiency Reports (DDR)

B. Overview Problems:

1. NRC Identified (See I.B.1 for types)

2. TVA Internal:

a. NSRS (See I.B.2.e for types)

b. OE QA Audit Findings (DQA)

3. INPO (8)

C. Concerns:

1. QCT/ERT Employee Concerns (EC)

WATTS BAR - DOCUMENT LOGIC

I. OC

A. In-process reports of conditions adverse to quality:

1. Nonconforming Condition Reports (NCR) - Source: WBNP-QCI-1.02

2. Condition Adverse to Quality Report (RAC) - These reports were similar in function to Reports of Adverse Condition at SQN. Source: DEC-QCP-1.4/WBNP-QCP-1.4

3. Inspection Rejection Notices - These were not considered since they are primarily a communications tool used to inform craft employees of a failed inspection. Source: WBNP-QCI-1.02-1

4. Stop Work Authority (SWO) similar function to Stop Work Orders at SQN. Source: WBNP-QCI-1.32

5. Work Releases Written to Repair Base Metal Defects - Not considered because defects exceeding minimum wall thickness are escalated to NCRs. Source: WBNP-QCI-1.07

6. Weld Repair Operation Sheets - Not considered because this is a process control document. Source: WBNP-QCP-4.13

7. Arc Strike Removal Forms - These were not considered since they are process control documents. Source: WBNP-QCP-4.18.

8. Base Metal Repair Forms - These were not considered since they are process control documents. Source: WBNP-QCI-4.03-1

9. Welding Surveillance Weekly Checklist (WSC) - Source: WBNP-QCI-4.03

10. 50.55(e) Items (E)

B. Overview Problems:

1. NRC Identified

a. Violations - Early classification (V10)

b. Violations - Recent classification - Level I (V1), Level II (V2), Level III (V3), Level IV (V4), Level V (V5), and Level VI (V6).

c. Deficiency (DEF)

d. Deviations (DEV)

1. NRC Identified (Continued)

   e. Infraction (INF)

   f. Unresolved Items (URI)

   g. Inspector Follow-up Items (IFI)

   h. Confirmation of Action Letters (CAL)

2. INPO findings (8)

3. Authorized Inspection Agency

   a. SIS Reports (Z)

   b. ANSI N626.0 Audits (626)

   c. ASME surveys (SME)

4. Other reviews

   a. Black & Veatch (B & V)

5. TVA Internal

   a. Construction Audit Findings, Construction QA Audit Findings, or Deviation Reports (CQA)

   b. OEDC QA Audit Findings (EQA)

   c. Joint QA Audit Findings (JQA)

   d. Office of QA Audit Findings (OQA)

   e. NSRS Findings - Requirements (R), Enhancements (H), and General (G)

   f. "Mini INPO" Review

   g. Construction QA Surveillance Findings (S)

C. Concerns

1. QTC/ERT Employee Concerns (EC)

2. Allegations, Employee Concerns, and Differing Opinions (ALG) - Source: WBN-QCI-1.32

I. NO

A. In-process reports of conditions adverse to quality:

1. Discrepancy Reports (DR)

2. Corrective Action Reports (CAR)

B. Overview Problems:

1. NRC Identified (See I.B.5.e for types)

2. TVA Internal

a. NSRS (See I.B.5.e for types)

b. NO QA Audit Findings

3. INPO (8)

C. Concerns:

1. QTC/ERT Employee Concerns (EC)

I. OE

A. In-process reports of conditions adverse to quality:

1. Nonconformance Report (NCRs)

2. OE Problem Identification Reports (PIR)

3. OE Significant Condition Reports (SCR)

4. OE Preop Test Deficiency Reports (PTD)

5. OE Design Deficiency Reports (DDR)

B. Overview Problems:

1. NRC Identified (See I.B.1 for types)

2. TVA Internal

a. NSRS (See I.B.5.e for types)

b. OE QA Audit Findings (DQA)

3. INPO (8)

C. Concerns:

1. QTC/ERT Employee Concerns (EC)

BELLEFONTE - DOCUMENT LOGIC

I. OC

A. In-process reports of conditions adverse to quality

1. Welding Surveillance Weekly Checklist (WSC) - Source: BNP-QCP-8.1

2. Rejected NDE inspection results - These were not considered since they are process control documents. Source: BNP-QCP-7.1, 7.2, 7.3, 7.4, 7.5, and 7.9

3. Rejected Post Weld Heat Treatment records and special NDE records - These were not considered since they are process control documents. Source: BNP-QCP-8.2

4. Rejected Operation Checklists - These were not considered since they are process control documents. Source: BNP-QCP-8.4, 10.47

5. Quality Control Investigation Reports (QCR) - Source: BNP-QCP-10.26 and 10.4

6. Nonconformance Reports (NCR) - Source: BNP-QCP-10.4

7. Significant Condition Reports (SCR) - Source: BNP-QCP-10.4

8. Work Releases (WR) to correct problems not escalated to NCRs. Source: BNP-QCP-10.6

9. Measuring and Test Equipment Out of Tolerance Reports - These were not considered since they would not reflect actual welding - related problems. Source: BNP-QCP-10.11

10. Weld Repair Records - These were not considered since they are process control documents. Source: BNP-QCP-10.18

11. Arc Strike Removal Records (ARO) - Source: BNP-QCP-10.19

12. Stop Work Orders (SWO) - Source: BNP-QCP-10.33

13. Surveillance Inspection of Site Contractors - These were not considered since vendor welds are not the primary concern. Source: BNP-QCP-10.39

14. Inspection Rejection Notices (IRN) - These were not considered since they are primarily a communications tool used to inform craft employees of a failed inspection. Source: BNP-QCP-10.43

15. 50.55(e) Items (E)

B. Overview Problems

1. NRC Identified

a. Violations - Early classification (VIO)

b. Violations - Recent classification - Level I (V1), Level II (V2), Level III (V3), Level IV (V4), Level V (V5), and Level VI (V6).

c. Deficiencies (DEF)

d. Deviations (DEV)

e. Infraction (INF)

f. Unresolved items (URI)

g. Inspector follow-up items (IFI)

h. Confirmation of Action Letters (CAL)

i. Open items (OPN)

2. INPO

a. SIE Findings (S8)

b. INPO Findings (8)

3. Authorized Inspection Agency

a. SIS Reports (Z)

b. ANSI N626.0 Audits (626)

c. ASME Surveys (SME)

4. Other reviews

a. Duke (DUK)

5. TVA Internal

a. Construction Audit Findings (CQA)

b. OEDC QA Audit Findings (EQA)

5. TVA Internal (Continued)

c. Joint QA Audit Findings (JQA)

d. Office of QA Audit Findings (OQA)

e. NSRS Findings - Requirements (R)
Enhancements (H), and General (G)

C. Concerns

1. QTC/ERT Employee Concerns (EC)

2. Allegations (ALG) - Source: BNP-QCP-10.28

3. Employee Concerns (ECT) - Source: BNP-QCP-10.35

II. NO

A. In-process reports of conditions adverse to quality:

1. Discrepancy Reports (DR)

2. Corrective Action Reports (CAR)

B. Overview Problems

1. NRC Identified (See I.B.1 for types)

2. INPO Findings (8)

3. Authorized Inspection Agency (Z)

4. Other Reviews

5. TVA Internal

a. NO QA Audit Findings (PQA)

b. NSRS (See I.B.5.e for types)

C. Concerns

1. QCT/ERT Employee Concerns (EC)

III. OE

A. In-process reports of conditions adverse to quality

1. Nonconformance Reports (NCR)

2. Problem Identification Reports (PIR)

3. Significant Condition Reports (SCR)

4. Preop Test Deficiency Report (PTD)

B. Overview Problems

1. NRC Identified (See I.B.1 for types)

2. TVA Internal

a. OE QA Audit Findings (DQA)

b. NSRS (See I.B.5.e for types)

3. INPO (8)

C. Concerns:

1. QTC/ERT Employee Concerns (EC)

BROWNS FERRY - DOCUMENT LOGIC

I. OC

A. In-process reports of conditions adverse to quality:

1. Repair of Major Defects Data Sheet. Source: BF-12

2. Rediographic Record. Source: BF-15

3. Daily Temperature Check. Source: BF-44

4. Repair Data Sheet Piping Welds - These were not considered since they are process control documents. Source: BF-45

5. Hanger and Restraint Inspection of Piping Systems. Source: BF-47

6. Deficiency, Deviation, or Nonconformance Report. Source: BF-79

7. Corrective Action or Repair Procedure for Deficiency, Deviation or Nonconformance. Source: BF-79

8. Inspection Data Sheet for Cable Trays, Conduit, and their supports. Source: BF-113

9. Visual Examination Data Sheet. Source: BF-120

10. 10 CFR 50.55(e) Reports (E)

B. Overview Problems:

1. TVA Internal

a. Inspection Report Filler Metal Storage Areas. Source: BF-44

b. Quality Assurance Audits. Source: BF-55

c. Construction QA Audit Findings or Deviation Reports (CQA)

d. OEDC QA Audit Findings (EQA)

e. Joint QA Audit Findings (JQA)

1. TVA Internal (Continued)

   f. Office of QA Audit Findings (OQA)

   g. NSRS Findings - Requirements (R), Enhancements (H), and General (G)

2. NRC Identified:

   a. Violations - Early Classification (VIO)

   b. Violations - Recent Classification - Level I (V1), Level II (V2), Level III (V3), Level IV (V4), Level V (V5), and Level VI (V6)

   c. Deviations (DEV)

   d. Deficiencies (DEF)

   e. Infractions (INF)

   f. Unresolved Items (URI)

   g. Inspector Follow-up Items (IFI)

   h. NRC Confirmation of Action Letters (CAL)

C. Concerns:

   1. QTC/ERT Employee Concerns (EC)

II. NO

A. In-process reports of conditions adverse to quality:

   1. Discrepancy Reports (DR)

   2. Corrective Action Reports (CAR)

B. Overview Problems

   1. NRC Identified (See I.B.2 for types)

   2. INPO Findings (8)

   3. Authorized Inspection Agency (Z)

4. TVA Internal

a. NO QA Audit Findings (PQA)

b. NSRS (See I.B.1.g for types)

C. Concerns

1. QCT/ERT Employee Concerns (EC)

III. OE

A. In-process reports of conditions adverse to quality

1. Nonconformance Reports (NCR)

2. Problem Identification Reports (PIR)

3. Significant Condition Reports (SCR)

4. Preop Test Deficiency Report (PTD)

B. Overview Problems

1. NRC Identified (See I.B.2 for types)

2. TVA Internal

a. OE QA Audit Findings (DQA)

b. NSRS (See I.B.1.g for types)

C. Concerns:

1. QTC/ERT Employee Concerns (EC)

PROBLEM CODES AND DEFINITIONS

Code	Problem Type	Encoding Helps and/or Definitions
	Welding	
	I. Construction	
	A. Material (hardware)	
	1. Electrode	
WCMEQ	a. Quality	Poor operability, Elec. Damage
WCMWE	2. Welding equipment	Mech. or Elect. Prob. with machine or wrong machine
	3. Completed welds	
WCMCU	a. Undet. defects	Nonspecific defects reported in investigations & employee concerns
WCMCW	b. Weld repairs	Repair dispositions on NCRs - No root cause given
WCMCA	c. Arc strikes	Nonspecific - little used
WCMVW	4. Vendor welds	Reports of defects or repairs req'd on vendor welds thru NCRs
	5. Hardware	
WCMHC	a. Spec. components	NCRs, Employee concerns which address
		1. components - vessels, etc.
WCMHS	b. Spec. structures	2. Structures - S. Steel, etc.
WCMHY	c. Spec. systems	3. Systems - piping
	B. Program (Implementation)	
WCPWM	1. Workmanship	Audits or employee concerns on production techniques or adm. items

Code	Problem Type	Encoding Helps and/or Definitions
	B. Program (Implementation) (Continued)	
	2. Qualification	
WCPQW	a. Welder Perf.	Welding outside qualif./wrong qualif.
WCPQI	b. Inspector	Improper or questionable qualif.
WCPQE	c. Engineer	Questionable qualif. or ability
	3. Training	
WCPTT	a. Inad. Training	Inspector/eng./craft dispositions to NCRs and audits
WCPTI	b. Inad. Instruct.	Resp. person doesn't understand instructions given - NCR/Audit
	4. Material Control	
WCPME	a. Electrodes	Questions or complaints from employee concerns
	5. Implementation	
WCPIF	a. Failure to follow procedure	Procedural violations of all types
	C. Documentation	
WCDRM	1. Records	Missing or inaccurate records
	2. Procedures	
WCDPW	a. Weld accept. criteria	Lack of clearcut crit. or questions
WCDPR	b. Reinsp. criteria	Lack of clearcut crit. or questions
WCDPS	c. Sampling crit.	Lack of clearcut crit. or questions
WCDPW	d. Inadequate	Inadequacies identified in NCRs, audit, etc.

Code	Problem Type	Encoding Helps and/or Definitions
	II. Design	
WDDDD	A. Drawing	Inadequacies identified in NCRs, audits, etc.
WDDSS	B. Specifications	Inadequacies identified in NCRs, audits, etc.

DISPOSITION CODES AND DEFINITIONS

DISPOSITION CODE	DISPOSITION SPECIFIED ON DOCUMENT
D01	Use "as is"
	Rework:
D02	To original specification
D03	To other than original specification.
	Procedure Change
D04	New Procedure to Cover Overlooked Element
D05	Revision to Exisiting Procedure.
	Train Participants.
D06	Engineers
D07	Craft
D08	QC
	Administrative Action
D09	Disciplinary
D10	Action to Correct A Deficiency
	Design Revision
D11	Drawing
D12	Specification
D13	Scrap/Reject
D14	No Action Required
D15	Doc Correction
D16	Escalation to higher-tier document

PROBLEM CATEGORIES

1. Welding Materials/Welding Equipment
   - A. Electrode Control
   - B. Welding Equipment
   - C. Electrode Quality
2. Personnel Qualifications
   - A. Welder Performance Qualification
   - B. Inspector Qualification
   - C. Engineers Qualification
3. Procedural Deficiencies and/or Violations
   - A. Weld Acceptance Criterion
   - B. Weld Documentation
   - C. Undetected Weld Defects
   - D. Weld Repairs
   - E. Arc Strikes
   - F. Errors (Failure to Follow Procedure)
4. Hardware Concerns
   - A. Specific Components
   - B. Specific Structures
   - C. Specific Systems
5. Design Deficiencies
   - A. Drawing
   - B. Spec

6. Program Concerns

   A. Reinspection Criterion/Special Programs/Evaluation

   B. Implications of Evaluation of Sampling

   C. Vendor Welds

   D. Workmanship/Production Effectiveness

   E. Implementation of Program

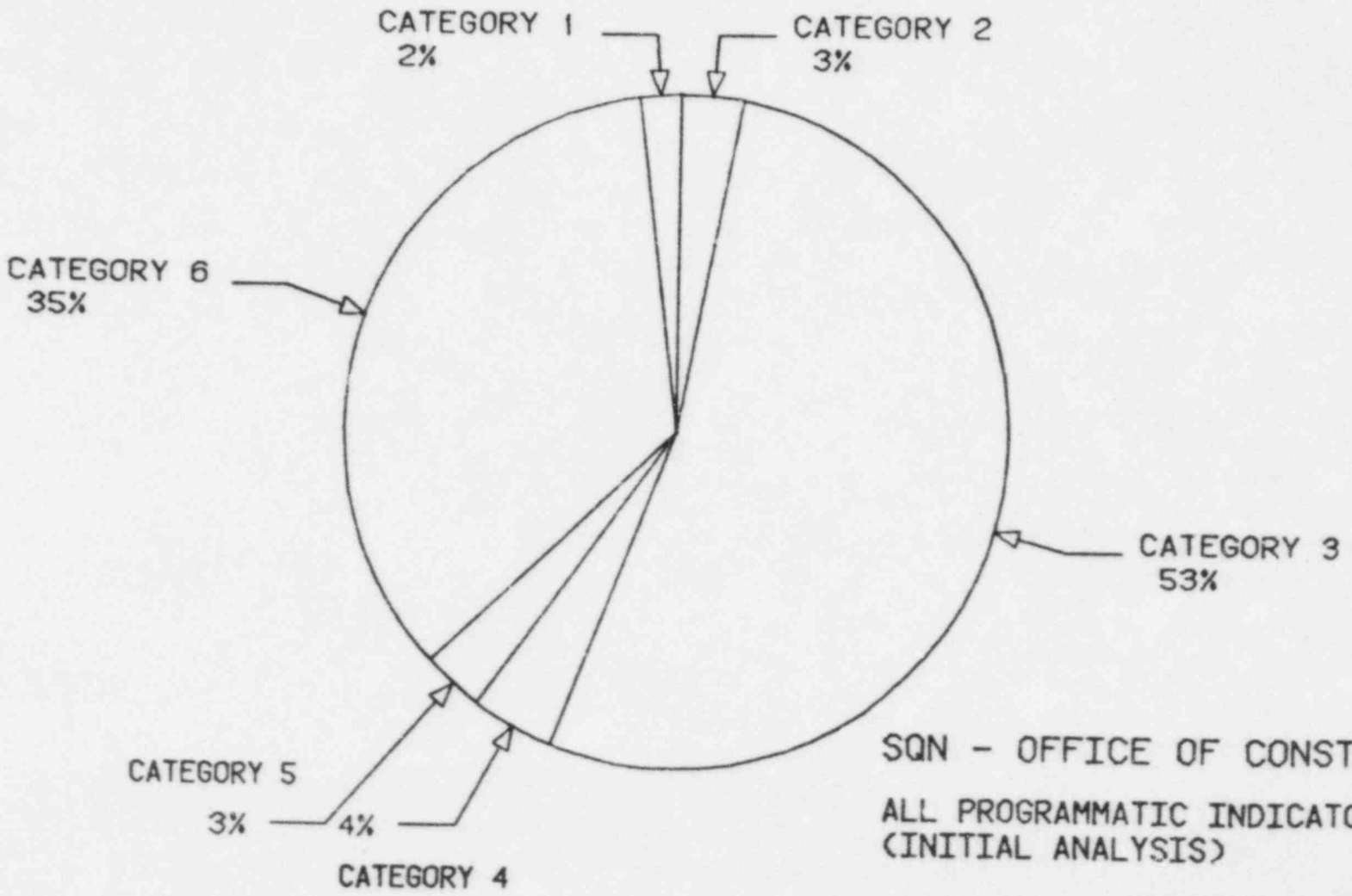
   F. Inadequate Procedures (Program)

   G. Inadequate Instruction (Administrative)

   H. Inadequate Training

Plant	Problem Type	Problem Number	Problem CODE	Disposition Code	Initiation Date

TVA 10179 (CONST 6-79)

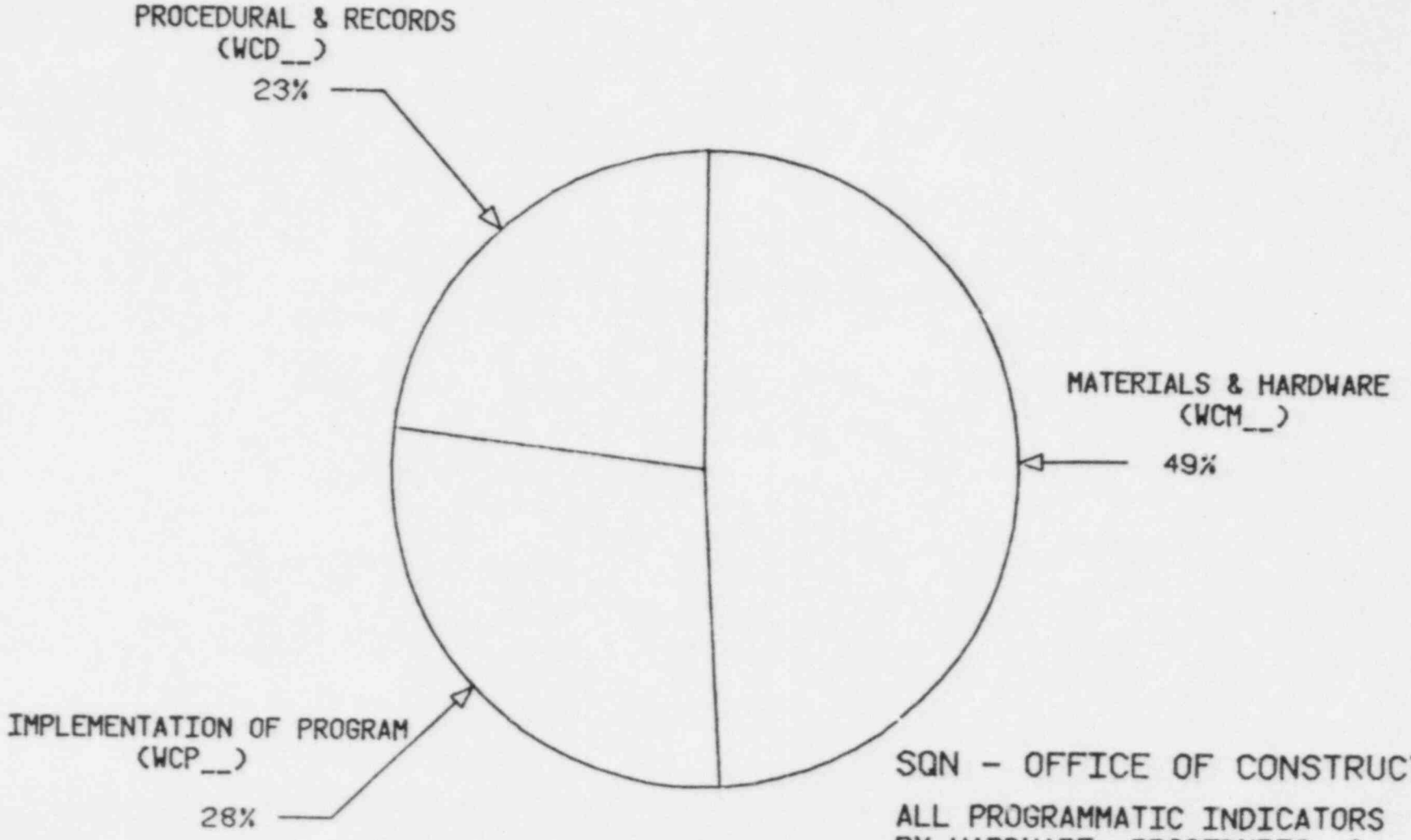


SQN - OFFICE OF CONSTRUCTION

ALL PROGRAMMATIC INDICATORS
(INITIAL ANALYSIS)

(1/15/86 RUN)

Figure 1



SQN - OFFICE OF CONSTRUCTION

ALL PROGRAMMATIC INDICATORS
BY HARDWARE, PROCEDURES, &
PROGRAM IMPLEMENTATION

(1/15/88 RUN)

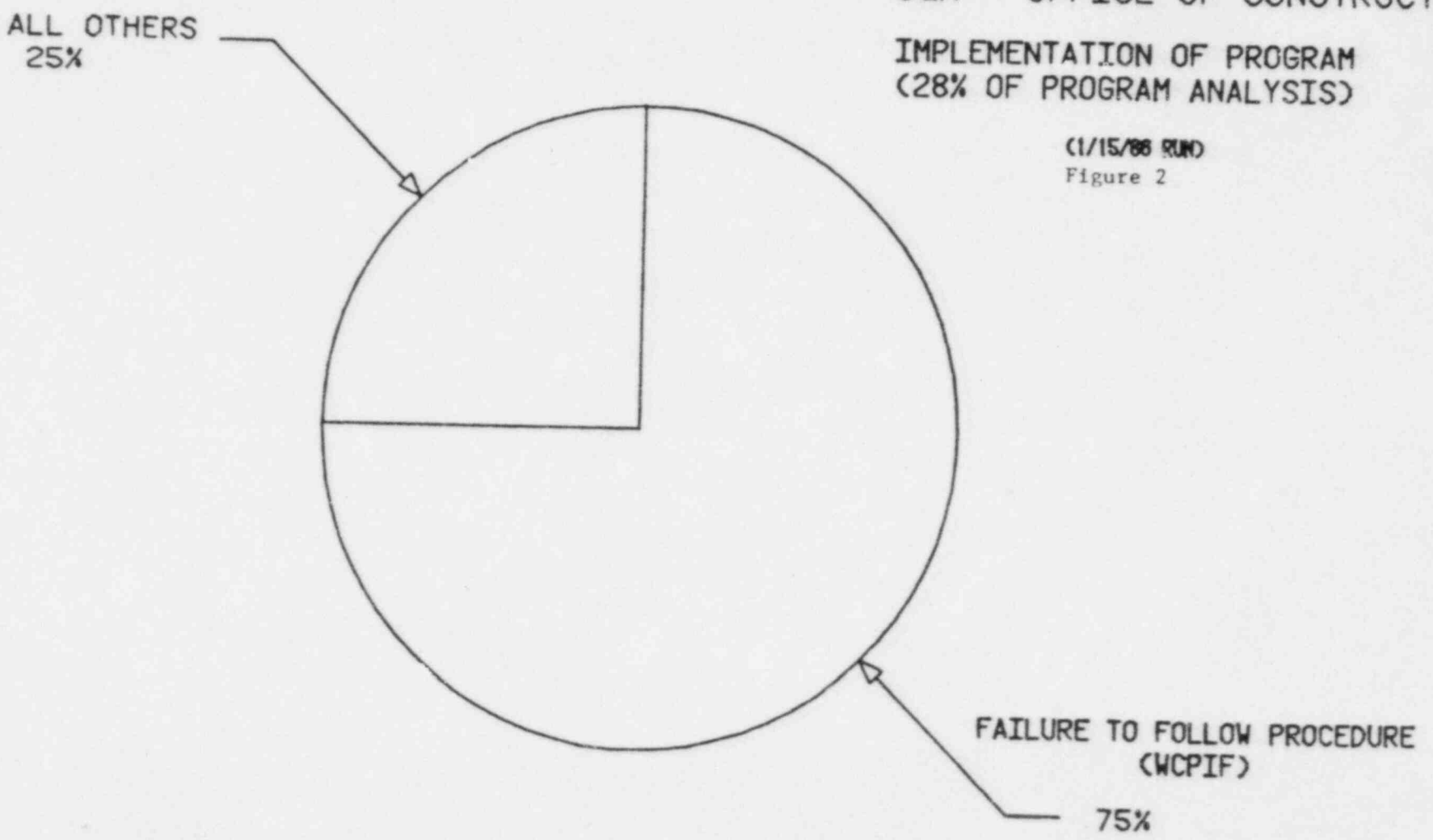
Figure 1A

SQN - OFFICE OF CONSTRUCTION

IMPLEMENTATION OF PROGRAM
(28% OF PROGRAM ANALYSIS)

(1/15/86 RUN)

Figure 2

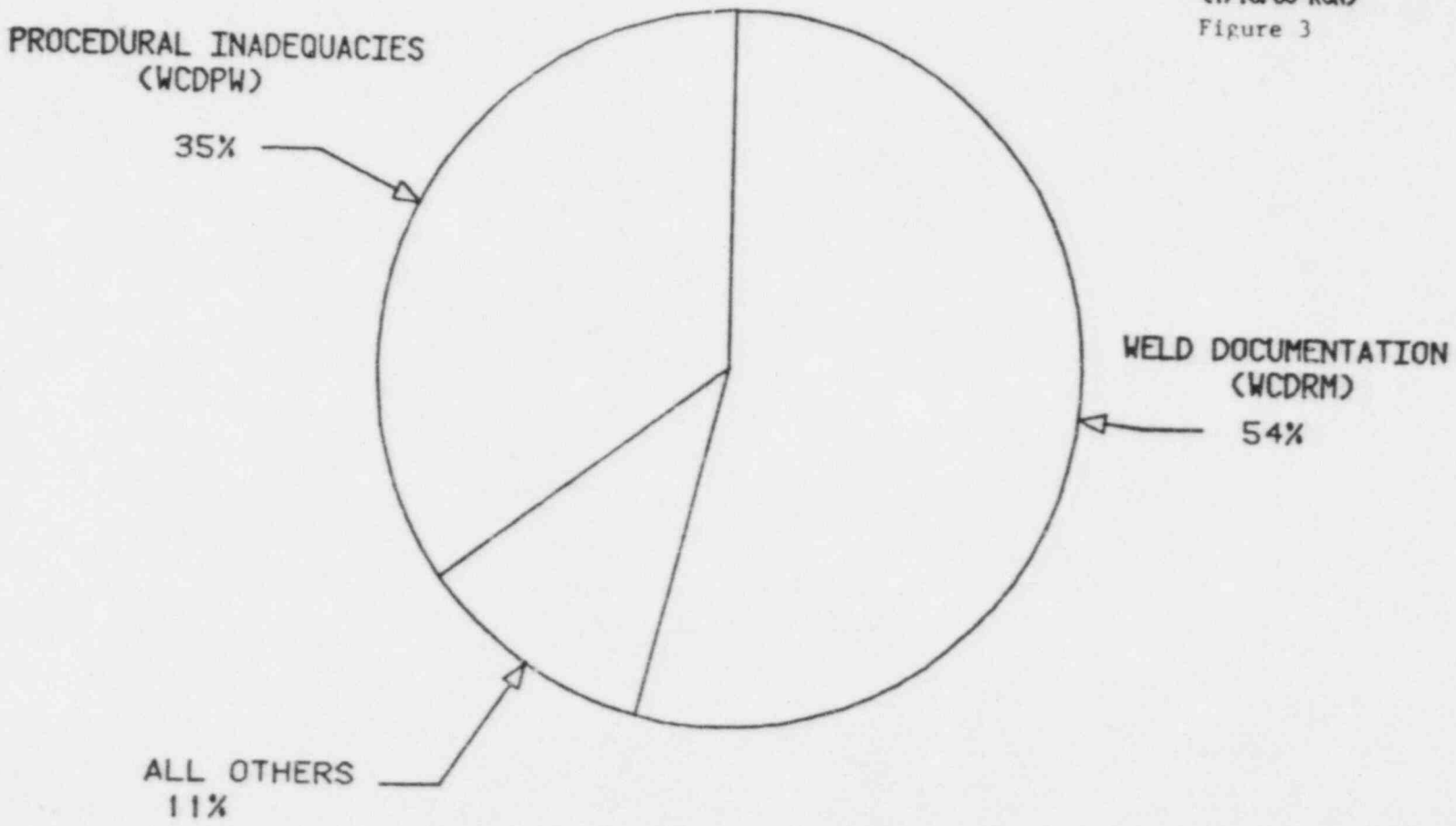


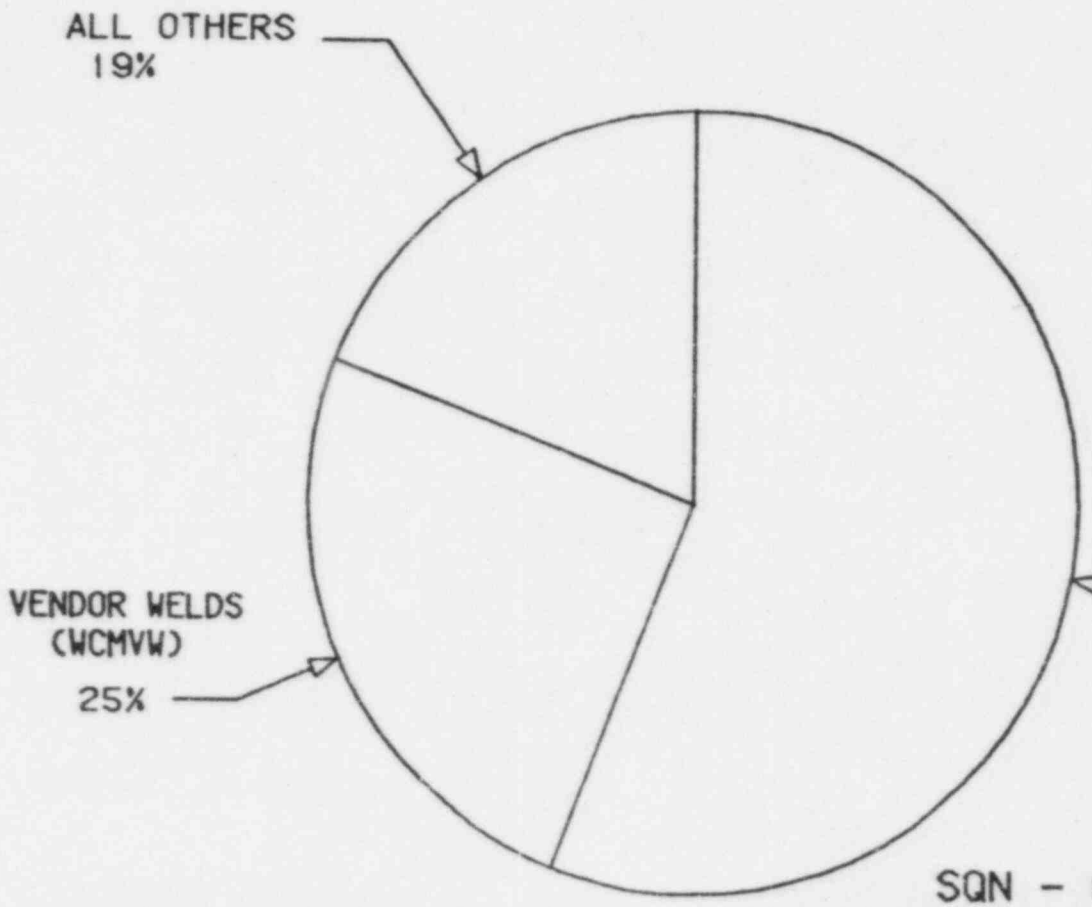
SQN - OFFICE OF CONSTRUCTION

PROCEDURAL ADEQUACY & DOCUMENTATION
(22% OF PROGRAM ANALYSIS)

(1/15/86 RUN)

Figure 3





SQN - OFFICE OF CONSTRUCTION

HARDWARE
(49% OF PROGRAM ANALYSIS)

(1/15/88 RUN)

Figure 4

DETAILED EVALUATION OF SQN EMPLOYEE CONCERNS

I. GENERIC CONCERNS

Concern	Description	Comments
IN-85-441-003 IN-85-234-001 IN-85-424-001 IN-85-426-001 IN-85-352-002 *EX-85-039-001	Lack of portable electrode holding ovens at WBN.	This is not a valid concern at SQN. Portable electrode holding ovens were used at SQN from the end of 1974 until completion of construction. Nuclear Operations uses either extended issue qualified electrodes or portable electrode holding ovens if needed.
	*An additional issue for this concern is the accountability of electrodes upon return. The concern states that: "Weld rods are not adequately accounted for when it is returned."	This is not a valid concern at SQN. The SQN procedures require unused electrodes to be returned by the end of the shift. Electrode stubs could be thrown away. Unused electrodes could not be thrown away.
WI-85-013-003 WI-85-041-006 WI-85-041-008 IN-85-458-001 WI-84-041-008	Concerns about possible inspection of welds through paint.	This is not a valid concern at SQN. Welding was complete at SQN prior to any allowance of this practice by design specifications. Specification revisions to allow this practice were initiated in 1982. This was used for reinspection sampling of completed welds. Site procedures stated that painting of welds was not to take place unless inspections on welds were completed. Nuclear Operations (NO) performs visual inspections in accordance with ASME XI requirements which do not require removal of paint for preservice and inservice inspections. Postweld examinations required by ASME III are performed prior to painting. If a weld has been inadvertently painted prior to inspection; the

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
		paint is removed and the weld is inspected and recoated.
**IN-85-346-003 **EX-85-021-002 **IN-85-426-002	*Lack of objective evidence/compliance with welder qualification continuity.	TVA initiated Stop Work Order 25 to investigate and document the corrective action for this problem. SQN-NO has initiated a review of welder qualification continuity (S06 851206 800). All identified lapses of continuity have been dispositioned and corrective actions taken. SQN welders who have transferred qualifications from WBN-OC have successfully passed a requalification test administered at SQN to reestablish the welder's qualifications similar to what was done at WBN. These actions fully address the issue of welder continuity at SQN.
IN-85-480-004	Welder cert. update is inadequate. Running of stringers to update.	This is not a valid concern at SQN. This is an acceptable practice for update of welder certification, as it satisfies both ASME IX and AWS D1.1.
EX-85-042-003	Welder Quals. updated with one position test plate.	This is not a valid concern at SQN. This practice is allowed by the provisions of ASME IX, QW 322 and AWS D1.1 paragraph 5.30.

**Concerns were investigated by QTC in a report dated 09/26/85.

IN-85-406-003 IN-85-134-002 IN-85-007-001	Availability of weld inspection tools.	This is not a valid concern at SQN. Weld inspection tools were furnished at SQN during construction and SQN-NO QA inspectors are furnished inspection tools.

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
WI-85-053-004 XX-85-068-006	Welding material control program does not meet ASME requirements because material identification on filler metal is not maintained to the completed weld joint.	This is not a valid concern at SQN. The TVA system of electrode control is in accordance with the provisions of ASME III, NB4122. This provision is unchanged since the 1971 Edition. It states in part, "Welding and brazing materials shall be identified and controlled so that they can be traced to each component and/or installation of a piping system, or else a control procedure shall be employed which ensures that the specified materials are used. OC has used the underlined option since the inception of the program. TVA purchased all material to ASME III Class NB requirements. Inspection procedures on all monitored welds required verification filler material by type at the time of fit up and at the beginning of each shift and while the weld was in progress. Both monitored and nonmonitored welds were checked for Detailed Weld Procedure (DWP) compliance on a surveillance basis. This included undocumented filler material verification on undocumented welds. NO maintains filler metal traceability to the weld joints.

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
IN-85-476-004 XX-85-069-003	Lack of details of specific training program for welding inspectors. Also, poorly trained inspectors with questionable training history.	This is not a valid concern at SQN and has been addressed by review of training programs and personnel records. These records are well documented. Certification tests and results are also on file. Additionally, both QC & NO welding inspector training meets or exceeds the industry standards, and ASNT-TC-1A requirements. Personnel records will include past work and training history of each person. Almost all construction welding inspectors at SQN QC had training at Oak Ridge Training and Technology School, Oak Ridge, TN, experience at Combustion Engineering, Chattanooga, TN, or other utilities, or testing companies.
IN-85-406-002	No specific weld insp. criteria for use by insp. personnel. This is generic to all plants.	Weld inspection criteria has always been defined in G-29 for construction and N80E3 or PMP1502.07 for NO. These concerns are not suported by any objective evidence.

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
WI-85-041-002	Qual./training of AWS welding inspectors does not meet ANSI N45.2.6.	This is not a valid concern at SQN. TVA has always taken certain exceptions to ANSI N45.2.6. These exceptions are minimal and simply subtitute other training and qualification elements which are generally accepted in the nuclear industry. Among them are (1) levels to which personnel are certified and (2) qualification and training requirements. TVA inspectors are certified to internal program requirements specifically designed for force account construction and operation. These exceptions are fully delineated in the FSAR. This was true for SQN-OC and is still true for SQN-NO.
IN-85-706-001 XX-85-045-001	Welders are not properly trained to produce good welds under field conditions.	SQN and other TVA Construction Sites have historically had extensive welder training programs. SQN had a welder training facility in operation continuously from the beginning of construction at SQN until approximately 1981. Welders for TVA OC & NO must satisfactorily pass a test mandated by ASME or AWS prior to being employed as a welder or in the case of apprentices prior to being allowed to weld on permanent materials. This is an industry standard.

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
WI-85-030-001	Welding/NDE corrective actions specified in QAF-2, 9/80, have not been implemented.	This is not a valid concern at SQN. SQN was essentially complete when this evaluation was done. The evaluation encompassed all construction sites and contained recommendations. It did not find specific noncompliances. (One deficiency was identified at BLN but was handled by site audit.) A number of appropriate recommendations made in this report were implemented in the programs at subsequent sites (WBN and BLN).
IN-85-282-002	Grinding of piping welds smooth may mask surface defects.	This is not a valid concern at SQN. This concern has no generic or technical basis. Grinding is performed to remove surface defects and cosmetic imperfections, not mask them. This is an economic consideration and not one of quality. None of the codes that TVA is committed to prohibit grinding of completed welds.
IN-85-273-001	Welds on pipe supports over six feet off the floor have not been painted. Deterioration of welds could occur.	This is not a valid concern at SQN. This concern has no generic or technical basis. Protective coating requirements are established by OE and communicated by drawing to the implementing agency. If required by drawing, they will be painted in accordance with the paint schedule. If OE determines that environmental conditions do not require protective coatings, the feature is not painted.

I. GENERIC CONCERNS (Continued)

Concern	Description	Comments
IN-85-127-001 ***IN-85-007-003	Vendor welds do not appear to meet specifications.	Vendor welding concerns will be investigated as part of the WBN Employee Concerns. The results of these investigations will be considered by the Employee Concerns program.

***This is a WBN concern applicable to Bergen-Patterson Hanger Welds.

XX-85-086-002	Design deficiency on box anchors foul pipe.	This was substantiated. This has been investigated for SQN and discussed in this report in relation to the specific concerns for XX-85-086-003. See Specific Concern XX-85-086-003 on page 8 of this appendix.

PH-85-012-X03	Welding/brazing inspection on HVAC duct work was deleted subsequent to 1981 without adequate justification.	This is a WBN issue which was documented as a 50.55(e) item in 1981. It has been investigated by QTC in ERT Report PH-85-012-001 dated 10/22/85. The quality of this work will be reviewed as part of the verification reinspection part of Phase II at SQN.

II. SPECIFIC CONCERNS

Concern	Description	Comments
XX-85-065-001	ISI inspectors not properly performing remote inspections.	Not substantiated. See NSRS Report I-85-750-SQN.
XX-85-083-001	Welding inspection was not as strict at SQN as at WBN.	Not substantiated. See NSRS Report IN-85-652-SQN.
XX-85-102-011	ISI NDE Inspectors can only write in-service-related defects. Preservice defects must be written on maintenance requests.	Not substantiated. See NSRS Report I-85-735-SQN.
XX-85-086-003 *EX-85-039-003	Design deficiency on box anchors. Weld fouls pipe.	This is a substantiated concern on eight box anchors on ECN L6319. See NSRS Report I-85-560-SQN. SQN has initiated an FCR to correct this condition for SQN. One of the deficient box anchors has been fabricated correctly at SQN. The remaining seven (7) will be fabricated per the FCR for ECN L6319.
XX-85-049-X03	Welder certification card falsified. QC dept. concern. No additional info.	This is being investigated on I-85-502-SQN. Report from ERT (QTC) should be finalized by 2/1/86.
XX-85-088-001	Welders qualification documentation altered with whiteout, occurred in Knoxville.	No analysis could be made from data available. Report from ERT (QTC) should be finalized by 2/1/86.

*Concern applies to WBN only.

II. SPECIFIC CONCERNS (Continued)

Concern	Description	Comments
XX-85-069-001	Employees are certified but not qualified. Suggestion is that OJT records are not accurate.	This issue is being investigated as a generic concern. See NSRS Report I-85-737-SQN. Report should be finalized by 2/1/86.
Corollary: XX-85-069-X05	Employee's OJT records falsified.	This issue is being investigated by NSRS. A report should be finalized by 2/1/86 (I-85-737-SQN).
XX-85-013-001	E309 Filler material was used to weld E316 base material.	This is an acceptable practice. E309 and E316 are compatable materials. It is permissable by code to weld type 316 base metals with E309 welding filler materials. ERT (QTC) has investigated this concern in ERT investigation report XX-85-013-001 dated 8/22/85. This concern was closed on 8/29/85.
XX-85-101-006	Welders made welds without proper test qualification. (Emphasis added)	This has been identified in surveillances and audits by NO QA. It is being investigated. ERT (QTC) is investigating this issue. The report is to be finalized by 2/1/86.
XX-85-041-001	Unit 1 Diesel-Generator (CS/SS) was made with incorrect electrode.	This concern was not substantiated. See NSRS report I-85-756-SQN.

II. SPECIFIC CONCERNS (Continued)

Concern	Description	Comments
XX-85-100-001	An undetermined number of welds in unspecified locations may have been improperly repaired. (Emphasis added)	Both aspects of this concern are impossible to substantiate or deny due to to the information content of the concern is simply not sufficient to make a meaningful evaluation. ERT (QTC) is attempting to investigate this concern. A report is scheduled by 2/1/86.
XX-85-108-001	Welds in unit 1 accumulator rooms and/or fan rooms were not inspected.	This concern was not substantiated. See NSRS report I-85-776-SQN.
XX-85-108-002	Programmatic breakdown occurred in the weld inspection process nine or ten years ago. Some welds on 2-inch S.S. socket welds were not inspected. CI has no additional info.	This concern was not substantiated. See report I-85-776-SQN.
XX-85-054-001	QC hold points were signed off by craftsmen doing the work. (1979-1984)	This concern was not substantiated. See NSRS report I-85-346-SQN.
XX-85-068-007	TVA fabricated a spool piece and substituted it for a Dravo spool piece. TVA allegedly removed the Dravo name-plate and reaffixed it to the TVA fabricated spool.	This concern was not substantiated. The process specification permitting this practice was not applicable to SQN. NSRS will issue a report by 2/1/86.
SQM-5-001-001	G29-C is in confict with Topical Report. G29-C P.S.O.C.1.1.a. Allows welder foremen to perform quality inspections.	This concern was not substantiated. The process specification permitting this practice was not applicable to SQN. NSRS will issue a report by 2/1/86.

II. SPECIFIC CONCERNS (Continued)

Concern	Description	Comments
SQM-5-001-002	Violation of ANSI requirements. Welder foremen allowed to make quality inspections.	This concern was not substantiated. The Process Specification permitting this practice was not applicable to SQN construction. NSRS will issue a report by 2/1/86.
XX-85-069-003	BLN - Many employees certified but not qualified. Do not have sufficient OJT.	Discussed with generic concerns. This will be investigated as part of the BLN program.
XX-85-069-X13	Employees On-The-Job Training (OJT) Records have been falsified.	Being investigated by NSRS/ OGC. Report to be finalized by 2/1/86.

APPENDIX E

SQN EMPLOYEE CONCERNS TEXT WITH REPORTS

TABLE OF CONTENTS

EMPLOYEE GENERIC CONCERNS	EMPLOYEE SPECIFIC CONCERNS
IN-85-441-003	XX-85-065-001
IN-85-234-001	XX-85-083-001
IN-85-424-001	XX-85-102-011
IN-85-426-001	XX-85-086-003
IN-85-352-002	EX-85-039-003
EX-85-039-001	XX-85-049-X03
	XX-85-088-001
WI-85-013-003	XX-85-069-001
WI-85-041-006	XX-85-069-X05
WI-85-041-008	XX-85-013-001
IN-85-458-001	XX-85-101-006
	XX-85-041-001
IN-85-346-003	XX-85-100-001
EX-85-021-002	XX-85-108-001
IN-85-426-002	XX-85-108-002
IN-85-480-004	XX-85-054-001
EX-85-042-003	XX-85-068-007
	SQM-5-001-001
IN-85-406-003	SQM-5-001-002
IN-85-134-002	XX-85-069-X13
IN-85-007-001	
WI-85-053-004	
XX-85-068-006	
IN-85-476-004	
XX-85-069-003	
IN-85-406-002	
WI-85-041-002	
IN-85-706-001	
XX-85-045-001	
WI-85-030-001	
IN-85-282-002	
IN-85-273-001	
IN-85-127-001	
IN-85-007-003	
XX-85-086-002	
PH-85-012-X03	

4 fsa

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50040

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

Priority: 1 Concern # IN-85-441-003

Category: 33 Confidentiality: __YES__NO (I & H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED ~~_NO_~~ Yes

Concern: NO PORTABLE OVENS ON WATTS BAR. THE ROD SOMETIMES COLLECTS MOISTURE BY THE END OF THE SHIFT AND CANNOT BE USED.

W S Shu 6/20/85
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

[signature] 6/22/85
NSRS DATE

WBN-1 ... 4 pp.

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50027

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

Priority:1 Concern # IN-85-234-001

Category:47 Confidentiality:__YES__NO (I & H)

Supervisor Notified: __YES __NO NUCLEAR SAFETY RELATED _YES_

Concern: WELD RODS ARE NOT REQUIRED TO BE KEPT IN ROD OVENS AFTER ISSUANCE TO STEAMFITTER WELDERS. THE ROD CAN BE KEPT UNHEATED FOR 8 HOURS AT A TIME IN A LEATHER POUCH.

[signature] 6/14/85

MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT______

NSRS________

OTHERS (SPECIFY)________________________

[signature] 6/15/85

NSRS DATE

WCPT I DC ICC 4 BL

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50041

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

Priority: 1 Concern # IN-85-424-001

Category: 33 Confidentiality: __YES__NO (I & H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED ~~NO~~ Yes

Concern: NO PORTABLE OVENS USED/REQUIRED ON WATTS BAR. THE ROD OFTEN COLLECTS MOISTURE AND SHOULD NOT BE USED.

MANAGER, ERT 6/4/85 DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

NSRS 6/5/85 DATE

4 RSE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T-50065

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

Priority: 1

Concern # IN-85-426-001

Category: 33

Confidentiality: ___YES ___NO (I&E)

Supervisor Notified: X YES ___NO

NUCLEAR SAFETY RELATED YES

Concern: Portable ovens are not required. Weld rod is kept out of oven for an entire shift. No follow-up.

welding rod

MANAGER, ERT 7/24/85 DATE

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) _____

NSRS 7/24/85 DATE

WCPT I 0C/CC 4

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50040

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

Priority: 3 Concern # IN-85-352-002

Category: 05 Confidentiality: __YES__NO (I & H)

Supervisor Notified: __YES X_NO NUCLEAR SAFETY RELATED ~~NO~~ Yes

Concern: NO PORTABLE OVENS ARE USED ON WATTS BAR. WELD ROD CAN BE KEPT OUT OF OVEN FOR AN ENTIRE SHIFT AND RETURNED TO OVEN FOR LATER USE.

MANAGER, ERT 6/19/85 DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

NSRS DATE

WCPME D0000 4

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50146

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

Priority: 1 Concern: EX-85-039-001

Category: 33 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern: WBNP: There are no Portable Ovens for storing Weld Rod after it has been issued to the Welder and the weld rod is not adequately accounted for when it is returned, i.e. rod stubs and unused rod. Const. Dept. concern. CI has no further information.

No followup required.

William S. Stephens SEP 20 1985
MANAGER, ERT DATE

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

ERT /

NSRS/ERT ____

NSRS ____

OTHERS (SPECIFY) ____

Bruce L. Siefken 9/25/85
NSRS DATE

welding rod

WCOPR LC/CC

Keywords
1 welding
2 inspection

REVISION

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50114

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

Priority: 1

Category: 33

Supervisor Notified: X YES ___ NO

Concern # WI-85-013-003

Confidentiality: ___ YES ___ NO (I&E)

NUCLEAR SAFETY RELATED Yes

Concern:
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 investigaton by ERT. The revison was made to separate the original 003 concern into two distinct concerns.)

[signature] AUG 14 1985

MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) ___

[signature] 8/19/85

NSRS DATE

WCPTI D08 "wong" 12

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TRANSMITTAL NUMBER T50193

TO: Director - NSRS

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

Concern # WI-85-041-006

Priority: 1

Category: 7

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED YES

Concern: 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.

O.D. Thero 11/16/85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓__ EG&G

OTHERS (SPECIFY) ______________________

Welding Inspectors

Bruce L. Siefken 11/22/85
NSRS DATE

Tray 16

F

WCDPW D12 (3) new

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50193

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

Priority: 1 Concern # WI-85-041-008

Category: 20 Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO NUCLEAR SAFETY RELATED YES

Concern: 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.

O. F. Thero 11/16/85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ___✓___ EG&G

OTHERS (SPECIFY) ____

welding Inspection

Bruce L. Loflin 11/24/85
NSRS DATE

WCG DC2

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50105

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

Priority: 1

Concern # IN-85-458-001

Category: 33

Confidentiality: n/a YES n/a NO (IGE)

Supervisor Notified: XX YES ___ NO

NUCLEAR SAFETY RELATED XX

Concern: 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.

welding inspection

MANAGER, ERT DATE

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

ERT ✓ (Refer to OGM "Carbogne Report")

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) _____

NSRS DATE

ERT Form K

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50026

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

Priority:1 Concern # IN-85-346-003

Category:06 Confidentiality:__YES__NO (I & H)

Supervisor Notified: __YES X_NO NUCLEAR SAFETY RELATED ~~NO~~ Yes

Concern: WELDER CERTIFICATIONS ARE UPDATED ON EVIDENCE OF ROD WITHDRAWAL SLIPS. THE PROCESS MAY NOT HAVE BEEN USED IN THE APPLICABLE TIME PERIOD, 90 DAY OR/80 DAY,DEPENDING ON ASME OR AWS.

MANAGER, ERT 6/14/85 DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

NSRS 6/15/85 DATE

WCPIF 06866 5 *

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TRANSMITTAL NUMBER T-50069

TO: Director - NSRS

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

Concern # EX-85-021-002

Priority: 1

Confidentiality: ___YES ___NO

Category: 07

NUCLEAR SAFETY RELATED YES

Supervisor Notified: X YES ___NO

Concern: There is no method/objective evidence to verify that a Welder has used a specific process when their weld cards are stamped/up-dated by QC.
No follow-up required - No additional information available.

welding
welds

7/17/8
MANAGER, ERT

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) ___

7/21/8
NSRS

WCPIF [illegible] 1 for

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T-50065

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

Priority: 1

Concern # IN-85-426-002

Category: 33

Confidentiality: ___YES ___NO (I&E)

Supervisor Notified: _X_ YES ___NO

NUCLEAR SAFETY RELATED yes

Concern: Updating of Welder Certifications is inadequate in that a welder is only required to present their card for updating and sometimes is asked to run a bead- never a complete weld. No follow-up.

welding
welds

MANAGER, ERT 7/11/85 DATE

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) _____

NSRS 7/21/85 DATE

TVA 84 (08-9-83)

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 : OCT 15 1985

SUBJECT: TRANSMITTAL OF INVESTIGATION REPORTS

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

WI-85-055-001	EX-85-021-002
WI-85-056-001	IN-85-424-011
IN-85-503-001	IN-85-540-001
IN-85-778-001	IN-85-426-002
IN-85-493-004	IN-85-815-001
IN-85-770-003	IN-85-835-002
IN-85-346-003	IN-85-352-001
IN-85-532-004	IN-85-612-006
IN-85-532-005	IN-85-091-X02
IN-85-543-002	

Original Signed By
M. A. Harrison

K. W. Whitt

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

Name _____ Date _____

Attachments
cc (Attachments):
J. W. Coan, P-104 SB-K
H. N. Culver, W12A19 C-K
E. R. Ennis, Watts Bar Nuclear Plant
G. Wadewitz, Watts Bar Nuclear Plant
W. F. Willis, E12B16 C-K (4)

ERT INVESTIGATION REPORT

CONCERN NO: IN-85-503-001, IN-85-778-001, IN-85-612-006,
IN-85-493-004, IN-85-770-003, IN-85-346-003,
IN-85-532-004, IN-85-532-005, IN-85-543-002,
EX-85-021-002, IN-85-424-011, IN-85-540-001,
IN-85-426-002, IN-85-815-001 IN-85-835-002,
IN-85-352-001 — MASTER TRACKING ITEM

CONCERN: See "DETAILS" Below

INVESTIGATION PERFORMED BY: William Kemp
Rana Ahmed

DETAILS:

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

IN-85-503-001

CONCERN: Individual (name known) in concerned individual's (hereafter CI) crew was given 2 weeks off for failing to have welding card updated by weld engineering. Individual had performed required welds but was out sick on the day update was required. Other individuals in CI's crew who had failed to get their cards updated received no disciplinary action or had received only an oral warning.

IN-85-778-001

CONCERN: Welder certifications have been improperly updated. No further details available.

IN-85-612-006

CONCERN: Welder certification update is inadequate and not enforced per an established set of criteria. Welders given time off without pay for failure to update certifications.

IN-85-493-004

CONCERN: Welder certification update is inadequate to verify that the welder can continue to weld a particular process.

IN-85-346-003

CONCERN: Welder certifications are updated on evidence of rod withdrawal slips. The process may not have been used in the applicable time period, 90 day or/80 day, depending on ASME or AWS.

CONCERN: See "DETAILS" below

DETAILS: (cont)

IN-85-532-004

CONCERN: Memo issued by management that provides direction that is contrary to the established procedure for welder re-certification. (Author of memo known to QTC)

#IN-85-532-005

CONCERN: Welders are recertified without verification that welders have performed specific weld technique.

IN-85-543-002

CONCERN: Welder certification update procedure is inadequate. Welders can be off work over 90 days and not be required to re-test upon returning to work.

EX-85-021-002

CONCERN: There is no method/objective evidence to verify that a welder has used a specific process when their weld cards are stamped/updated by QC.

IN-85-540-001

CONCERN: Inadequate welder certification update. Welder is "punished" if he/she forgets to update on time yet the update is a formality. There is no verification the process was used during the 90 day period. Employees are kept updated even though they do not weld for years at a time.

IN-85-426-002

CONCERN: Updating of welder certifications is inadequate in that a welder is only required to present their card for updating and sometimes is asked to run a bead - never a complete.

IN-85-815-001

CONCERN: Re-certification of some welders consists only of completing paperwork. These employees do not have to prove welding ability. This is done for some employees who have not welded for years.

CONCERN: See "DETAILS" page 1 & 2

DETAILS: (cont)

IN-85-835-002

CONCERN: Welders recertification can be accomplished by simply having ones card stamped. No performance test is required or conducted in the process.

IN-85-352-001

CONCERN: Welder updates certification by going to QC Welding and burning a rod or just striking an arc. No weld using the process is done or verification that the process had been used once during the 90/180 day period is required.

IN-85-424-011

CONCERN: Welder certification updating process is inadequate, and basing disciplinary actions on failing to comply with the process is unfair (e.g. welders who fail to renew certificates are given two weeks off, but recertification consists only of getting card stamped - no welding is involved).

IN-85-770-003

CONCERN: Individuals possessing invalid welder certifications.

Personnel Contacted: Confidential

Reference Documents:

Quality Assurance Manual 5.1 (ASME) Welding Control
Quality Control Instructions 4.02 Welder/Welding Operator Performance Qualification
G29 Project Specification Manual 1.M.2.2 Welder/Welding Operator Performance Qualification
IN-85-113-003
WBN-85 0108 200 Jan. 8, 1985
Letter May 24, 1984 Welder Certification/Update
WBN-84 0123 201 Jan. 23, 1984
ERT Investigation Reports WI-85-055-001 AND WI-85-056-001
Stop Work Authority #25

This investigation was conducted to determine the availability of documented evidence to support the welders qualification renewal of program a welders qualification.

CONCERN: See "DETAILS" page 1 & 2

DETAILS: (cont)

The following deficiencies were noted:

1) QAM 5.1 (ASME), G29 PSM 1.M.2.2 and QCI 4.02 are discrepant in identifying the responsibilities for the test shop and qualification tests. For example, QAM 5.1 states that the construction engineer designates the engineer who is to supervise the test shop and perform qualification testing. QCI 4.02 states the Welding Engineering Unit will be responsible for the test shop and qualification testing while G29 PSM 1.M.2.2 states that the test supervisor shall be responsible for the test shop and qualification testing.

2) During the investigation it was stated by a welding engineer "we do not qualify welders to Section IX only to G29." However, QAM 5.1 (ASME) refers to the "code", QCI 4.02 references the G29 specification and G29 PSM 1.M.2.2 states that welder qualification is in accordance with ASME Section IX.

3) A random selection of related NCRs (#4868, 5194, 4508R, 5304, 5303, 5065, 5034, 4577R) from 1981 to 1984 concerning expired welder qualification determined that the root cause was never evaluated or determined.

4) There is no documented evidence per QCI 4.02, paragraph 6.4.1.2 and QAM 5.1-(2.4) as to the verifiction of welders welding to a specific process to support their renewal of certification. The only evidence is if someone in QC saw or knows that the welder has performed an in process weld thus, justifying his renewal. However, no documentation is available to support QC's claim that this took place.

5) During the investigation the following incident was observed: A welder came to the test shop to update his welding certification. The welder was advised by a welding engineer to go to the test booth. After 2 or 3 minutes the welder came back to the office and gave his card to the weld engineer in the test shop office who stamped and initialed his card. It may be noted that both of the welding engineers were busy at that time with the ERT investigator. The welding engineer did not observe or verify the welders process per QCI 4.02, paragraph 6.1.5.1, 6.1.5.2, 6.1.3.1, 6.1.3.2. There was no observation of the welder taking any weld filler metal to the test booth (QCI 4.02, paragraph 6.1.1.3) or the welder bringing any hot metal to prove the process in the test booth (QCI 4.02 paragraph 6.1.5.3.1). It was also stated by the welding engineer that they do not observe all the welders all of the time (only 70%).

CONCERN: See "DETAILS" page 1 & 2

DETAILS: (cont)

6) If no one in QC has seen or has knowledge of the welder using a process in a 3 month period, the welder goes to the weld test shop to "burn a rod" on a plate to the process he is qualifying for with or without verification of position, current and material. The welder has now welded to a process within a 3 month period and his certification is renewed with no more documentation than a signature on a certification card.

Stop Work Authority #25 was issued to stop all weld activities on August 23, 1985. The following corrective action by management has been initiated and is in process. Reference ERT Investigation Reports WI-85-055-001/ WI-85-056-001 - on Stop Work Authority #25.

1) Re-certifing approximately 536 welders except for 30 welders which had been certified within 90 days previous to the stop work order being issued.

2) QCI 4.02 Welder and Welding Operator Performance Instruction, has been revised to include controls and specific objective evidence for welders preformance, verification and revewal of certification.

3) TVA Form 10204A (QC-8-85), Welding Material Requisition, will be revised to include the statement: "I certify that on this date this welder use the above welding process on _____(feature)."

The material requisition shall be kept for the life of construction and will be inputted into the computerized welder-welding operator listing on a daily basis.

4) Quality Training Program Manual 3-3 and QAM 5.1 will be revised to reflect the program for the control of welder's certification.

With the initiation of these controls by management, this should eliminate future problems however past problems on welders qualification must still be evaluated.

Memorandums WBN-84-0123-201, WBN-85-0108-200 and a memorandum which was dated May 24, 1984, all state:

1) "If the welders certification expire because of failure to have them updated the following actions will be taken"
"First Offence - Two week suspension"
"Second Offence - Termination"

CONCERN: See "DETAILS" page 1 & 2

DETAILS: (cont)

2) "The welder would be held responsible"

3) "Each welder is responsible"

4) "Alteration of penalty for welders" who fail to update the certification

However, the requirements per QAM 5.1 Rev. 20 states that for welder & welding operator qualification maintenance, the responsibility for this control is with the "Welding Engineering Unit/Welding Quality Control."

QCI 4.02 Rev. 3 states that the Welding Engineering Unit is responsible to control verification and renewal of qualifications.

ASME IX, QW 300.2 states that the manufacturer (TVA) is responsibility for welder qualification.

ASME Section III, Subsections NB, NC, and ND states that the manufactuer or installer shall maintain records of qualification of welders.

AWS D1.1 states that welder qualification requirements shall be controlled by the manufacturer & installer.

From these requirements and the performance of this investigation the following items are noted.

1) Responsibility for control of welder qualification (renewal) was not retained by management (per applicable requirements) but was directed to craft (welders).

2) There was no system or control to identify welders whose qualifications were up for renewal.

3) Memos surcomvented procedure requirements and commitments for control of welders qualifications.

Based on the findings in the investigation, this concern is substantiated. It is noted that TVA has initiated corrective action to resolve this concern, however the impact of past welder qualification problems must be evaluated.

Prepared by W M Kempf 9/26/85
Date

Reviewed by O L Thero 9/26/85
Date

Report reviewed and accepted [signature] NSRS 10/3/85

No new recommendations offered. Refer to IN 85 113 003 for corrective action [signature] 10/3/85

REQUEST FOR REPORTABILITY EVALUATION

FINAL

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

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

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

Updating of welder's certification was conducted without objective documentation evidence

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

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

NO ___ YES X If Yes, Explain: Without objective documented evidence to support renewal of certification, welding certification is indeterminate.

AND

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

No ___ Yes X If Yes, Explain: 10CFR50 Appendix 50 Criteria IX ANSI N45.2

OR

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

No X Yes ___ If Yes, Explain: _____

OR

ERT Form M

REQUEST FOR REPORTABILITY EVALUATION

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

No X Yes ___ If Yes, Explain: _____

OR

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

No X Yes ___ If Yes, Explain: _____

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

This Condition was Identified by: D. L. Shaw — ERT Group Manager — 365-4464 Phone Ext.

William S. Nichols — ERT Project Manager — 365-4421 Phone Ext.

Acknowledgment of receipt by NSRS

Signed — Date 10/2/85 Time 1251

ERT Form M

WCOPW DOCUMENT 5 HSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50031

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

Priority:3 Concern # IN-85-480-004

Category:33 Confidentiality:__YES__NO (I & H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED _YES_

Concern: WELDER CERTIFICATION UPDATE IS INADEQUATE. PERSONNEL MAY WORK IN A POSITION THAT DOES NOT REQUIRE ANY WELDING FOR 5-6 YEARS BUT CERTIFICATIONS ARE CONTINUALLY UPDATED. WHEN THESE PERSONS RETURN TO WELDING NO TESTS ARE CONDUCTED. THEY JUST RUN STRINGERS TO UPDATE CERTIFICATIONS.

6/14/85
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

6/20/85
NSRS DATE

WCPTI D0700

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50158

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

Priority: 1 Concern: EX-85-042-003

Category: 7 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern:Welderr are being requalified on carbon plate with a carbon backing strip. The test plate is set at 33 degree for the test and this one test requalifies the welder for every process he had before, including pipe. CI does not feel this is proper. Constr. Dept. concern. CI has no additional information.

No followup required.

MANAGER, ERT 10/9/85 DATE

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

ERT ✓

NSRS/ERT _____ ,

NSRS _____

OTHERS (SPECIFY) welding Welders

NSRS 10/9/85 DATE

TVA 64 (OS-9-83)

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : Craven Crowell, Director of Information, E12A4 C-K

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

DATE : November 8, 1985

SUBJECT: REPORTS SUBMITTAL FOR "NUCLEAR SAFETY UPDATE"

Attached is one copy each of the following final reports of investigation or evaluation of employee concerns for your use, summarization, and publication in Nuclear Safety Update. All have been reviewed and accepted by NSRS.

Concern No.	Investigation Performed by	Concern No.	Investigation Performed by
EX-85-042-003	ERT		
IN-85-325-006	NSRS		
IN-85-439-003	NSRS		
IN-85-460-003	ERT		
IN-85-534-002	NSRS		
IN-85-581-002	NSRS		
IN-85-671-004	NSRS		
IN-85-853-X02	ERT		
IN-85-915-002	NSRS		
IN-86-155-004	NSRS		

K. W. Whitt

Attachments

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

Name Date

Repo4A:B

cc: H. N. Culver, W12A19 C-K
W. F. Willis, E12B16 C-K (4)
QTC/ERT, CONST-WBN
E. R. Ennis, NUC PR, WBN

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. EX-85-042-003

DATE OF PREPARATION: 11-5-85

CONCERN: Welders are being requalified on carbon plate with a carbon backing strip. The test plate is set at 33 degrees for the test and this one test requalifies the welder for every process he had before, including pipe.

INVESTIGATION PERFORMED BY: ERT

FINDING(S): ASME Section IX, QW 322, Renewal of Qualification states in part:

> "Renewal of qualification for a specific welding process under (a or b) (Expired Qualification) "above may be made on a single test joint (plate or pipe) on any thickness, position or material to reestablish the welders or welding operators qualification for any thickness, position or material for the process for which he was previously qualified."

AWS D1.1, Section 5, Para 5.30, Period of Effectiveness states:

> "The requalification test need be made only in the 3/8" in. (9.5 MM) thickness."

Backing strips were utilized in all performance qualification renewal tests. A random review of welding procedures for backing material requirements determined the following:

A) SM-U-1, No backing required.
B) GT11-B-1 or GT11-O-1A, No backing required.
C) SM11-B-3, Backing required.

In the case of A&B, ASME and AWS concurs that if backing material is not required by the WPS, it may or may not be used. This means that a full penetration weld can be achieved with or without the use of backing material which is not considered an essential variable.

In the case of Item C, the WPS requires backing which is an essential variable.

CORRECTIVE ACTION(S) None required

CLOSURE STATEMENT: The concern as stated is substantiated in that the statement is true. However, the "performance qualification renewal test" conducted is in accordance with and acceptable by the AWS/ASME codes. TVA's "performance qualification renewal tests" satisfy the ASME/AWS code requirements for qualifications which have expired.

QUALITY TECHNOLOGY COMPANY

P.O. BOX 600
Sweetwater, TN
37874

ERT INVESTIGATION REPORT

CONCERN NO. EX-85-042-003

CONCERN: Welders are being requalified on carbon plate with carbon backing strip. The test plate is set at 33° for the test and this one test requalifies the welder for every process he had before including pipe.

INVESTIGATION
PERFORMED BY: W. M. Kemp, Jr.

Personnel Contacted: Confidential

Documents Reviewed:

ASME Section IX, Part QW Perforance Qualification
AWS D1.1 Section 5 Qualfication (Welders)
Process Specification 1.C.2.2 (R1) Test #SM-RQ (C) AWS
Process Specification 1.M.2.2 (R3) Test #SM-RQ (M) ASME
Process Specification 1.M. 2.2 (R3) Test #CT-RQ (M) ASME

Summary of Investigation:

The review and investigation of this concern has determined that the statement in the concern is substantiated, however this is an acceptable method for renewal of expired qualification per the ASME and AWS codes.

Findings:

ASME Section IX, QW 322, Renewal of Qualification states in part:

> "Renewal of qualification for a specific welding process under (a or b) (Expired Qualification) "above may be made on a single test joint (plate or pipe) on any thickness, position or material to reestablish the welders or welding operators qualification for any thickness, position or material for the process for which he was previously qualifiied."

AWS D1.1, Section 5, Para 5.30, Period of Effecftiveness states:

> "The requalification test need be made only in the 3/8" in. (9.5 MM) thickness."

DETAILS, continued

Findings, continued

The following are TVA's requirements for "Performance Qualification Renewal Test" - test coupons to be welded.

PS 1.C.2.2 (R1) AWS D1.1 3/8" x 3" x 6" Using Backing Strip SMAW, RT Exam
PS 1.M.2.2 (R3) ASME IX, 3/8" x 3" x 6" SMAW , Rt. Exam
PS.1.M.2.2 (R3) ASME I, x 3/8" x 3" x 6" GTAW, Rt. Exam

Backing strips were utilized in all performance qualification renewal tests. A random review of welding procedures for backing material requirements determined the following:

A) SM-U-1, No backing required.
B) GT11-B-1 or GT11-0-1A, No backing required.
C) SM11-B-3, Backing required.

In the case of A&B, ASME and AWS concurs that if backing material is not required by the WPS, it may or may not be used. This means that a full penetration weld can be achieved, with or without the use of backing material and is not considered an essential variable.

In the case of Item C, the WPS requires backing and is an essential variable.

Conclusion:

The concern as stated is substantiated in the fact that the statement is true. However, the "performance qualification renewal test" conducted is in accordance with and acceptable by the AWS/ASME codes. TVA's "performance qualification renewal tests" will satisfy the ASME/AWS code requirements for qualifications which have expired.

Report Reviewed & Accepted
10/24/85
NSLS

PREPARED BY [signature] Oct 18 1985
DATE

REVIEWED BY [signature] 10/19/85
DATE

FINAL

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. EX-85-042-003 _____
(ERT Concern No.) (ID No., if reported)

2. Identification of Item Involved: Welder Requalification
(Nomenclature, system, mfr., SN, Model, etc.)

3. Description of Problem (Attach related documents, photos, sketches, etc.)
Welders are being requalified on carbon plate with carbon backing strips. The test plate is set at 33 degrees for the test and this one test requalifies the welder for every process he had including pipe

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

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

No __X__ Yes _____ If Yes, Explain:_____

AND

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

No __X__ Yes _____ If Yes, Explain:_____

OR

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

No __X__ Yes _____ If Yes, Explain:_____

OR

REQUEST FOR REPORTABILITY EVALUATION

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

_____

_____

OR

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

_____

_____

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

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

_____ 365-4414
ERT Project Manager Phone Ext.

Acknowledgment of receipt by NSRS

_____ Date 10/25/85 Time 1125
Signed

ERT Form M

WCPTT D0700 1 FSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50013

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

Priority: 3 Concern # IN-85-406-003

Category: 39 Confidentiality:__ _YES _ __NO (I & H)

Supervisor Notified: __ _YES _ __NO NUCLEAR SAFETY RELATED YES

Concern: PRIOR TO 1979, NO WELD INSPECTION TOOLS WERE ISSUED TO INSPECTORS

W. F. Dubaak 6/10/85
MANAGER, ERT DATE

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

ERT_ __ __

NSRS/ERT__ ___

NSRS ✓ __ _ review w/ IN-85-007-001 (NSRS I-85-06-WEN)

OTHERS (SPECIFY) WG/FJS

[signature] 6/15/85
NSRS DATE

WCPTI D-800 7 ASR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50050

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

Priority: 1 Concern # IN-85-134-002

Category: 05 Confidentiality:__YES__NO (I & H)

Supervisor Notified: __YES X_NO NUCLEAR SAFETY RELATED ~~NO~~ Y 6/30/85

Concern: UNTIL RECENTLY (PAST 2 YEARS), TVA DID NOT PROVIDE QC INSPECTORS WITH WELDING INSPECTION TOOLS. SOME INSPECTORS PROVIDED THEIR OWN TOOLS BUT OTHERS DID NOT. CI HAS PASSED AWAY, NO FURTHER DETAILS AVAILABLE.

[signature] 6/25/85
MANAGER, ERT DATE

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

ERT_______

NSRS/ERT_______

NSRS ✓

OTHERS (SPECIFY)________________

[signature] 6/30/85
NSRS DATE

WNP1F IJC ECC-1

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS

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

Priority: 3 Concern # IN-85-007-001

Category: 10

Concern: INSPECTION TOOLS FOR WELDING INSPECTORS WERE NEVER ISSUED. I.E. FILLET WELD SIZE GAGES, FIT-UP GUAGES, ETC.

MANAGER, ERT 5/17/85 DATE

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

ERT ✓ - Include in Welding Program Review (XENCO) 6/13/85

NSRS/ERT ____

NSRS ✓ ~~MG/FJS~~ 6/12/85

OTHERS (SPECIFY) ____

NSRS 5/22/85 DATE

WCPTI D0700 4

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50135

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

Priority: 1 Concern # WI-85-053-004

Category: 33 Confidentiality: ___YES ___NO (I&H)

Supervisor Notified: ___YES _X_NO NUCLEAR SAFETY RELATED _YES_

Concern: WELD ROD CONTROL DOES NOT SATISFY CODE REQUIREMENTS. TVA ATTITUDE IS "ALL MATERIAL IS CODE MATERIAL". CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.

Welding
Rod

W. Thomas Dickson
MANAGER, ERT DATE

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

ERT X

NSRS/ERT _____

NSRS _____

OTHERS (SPECIFY) _____

W. Thomas 9/13/85
NSRS DATE

-WCPME
DOS

R&L

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50138

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

Priority:1 Concern:XX-85~~-058~~-006 068-9/12/85

Category: 33 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern:Bellefonte - Weld rod control does not satisfy code requirements. TVA attitude is "all material is code material". Construction dept. concern. CI has no further information.

welding Rod

No follow up required.

O.M. Thero 9/6/85
MANAGER, ERT DATE

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

~~ERT~~ ~~9/6/85~~

NSRS/ERT _____

NSRS 2

OTHERS (SPECIFY) _____

[signature] 9/6/85
NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50037

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

Priority: 3 Concern # IN-85-476-004

Category: 76 Confidentiality: __YES__NO (I & H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED _NO_

Concern: APPROX. 1980, TVA IMPLEMENTED A WELDING INSPECTORS TRAINING PROGRAM AND PEOPLE WITH A GROCERY CLERK BACKGROUND WERE INSPECTING WELDS WITHIN TWO WEEKS.

MANAGER, ERT 4/15/85 DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

NSRS 4/22/85 DATE

PSK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50180

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

Priority: 1

Concern # XX-85-069-003 - R1

Category: 5

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: VERY OFTEN, REJECTED ITEMS ARE ACCEPTED BY SOME ONE OTHER THAN A SUPERVISOR OR A HIGHER LEVEL (GRADE). TO ILLUSTRATE THE POINT, C/I STATED THAT THE SUPERVISOR WILL SEND ANOTHER EXAMINER/INSPECTOR WITH LESS QUALIFICATION AND EXPERIENCE TO RE-EXAMINE THE ONCE REJECTED ITEMS AND WILL GET ACCEPTANCE. C/I HAS NO FURTHER INFORMATION. NUC. POWER CONCERN.

William S. Lee
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ___✓___

OTHERS (SPECIFY) _____

Inspectors
Inspectors

Bruce F. Scaglione 11/6/85
NSRS DATE

P5R

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

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

Priority: 1 Concern: XX-85-069-003
I-85-738-BLN

Category: 5 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: BELLEFONTE. MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. THE CONCERN EXISTED FROM 1980 TO PRESENT. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

BLN | [illegible] Employees

NO FOLLOW UP REQUIRED.

[signature] 10/19/85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

Operation's Personnel

[signature] 10/24/85
NSRS DATE

WCP11 DC1007 PSR

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50013

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

Priority: 3 Concern # IN-85-406-002

Category: 39 Confidentiality:_ __YES ___ NO (I & H)

Supervisor Notified: ___ YES _X__NO NUCLEAR SAFETY RELATED YES

Concern: 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

[signature] 6/10/85
MANAGER, ERT DATE

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

ERT_ __ __

NSRS/ERT__ ___

NSRS ✓ __ _

OTHERS (SPECIFY) EPS/file

[signature] 6/15/85
NSRS DATE

WBPTT D-ECC 1 TBK

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50103

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

Priority: 1 Concern:WI-85-041-002

Category: 7 Confidentiality NA YES NA NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern: Qualification/training of inspectors for structural (AWS) weld visual examination is questionable; Level II certification is granted with only two months of OJT, which is not documented; the Topical Report has "bastardized" ANSI N45.2.6, regarding qualification of inspection/examination personnel. CI has no further information.

welding inspectors

No follow up required.

[signature] AUG 08 1985
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT _____

NSRS _____

OTHERS (SPECIFY) ______________________

[signature] 8/13/81
NSRS DATE

WCP11 LC/DC 5 tse

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50064

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

Priority: 1 Concern # IN-85-706-001

Category: 07 Confidentiality: __YES __NO (I & H)

Supervisor Notified: __YES X NO NUCLEAR SAFETY RELATED YES

Concern: Welders who went through TVA's Welder Training Program have insufficient training and experience to handle all variables involved to perform adequate welds for a nuclear installation. This inadequacy has created a lot of rework. CI has no more details.

welding
welders

MANAGER, ERT 2/16/85 DATE

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

ERT /

NSRS/ERT ___

NSRS ____

OTHERS (SPECIFY) _____

NSRS 2/21/85 DATE

WCPTT DC7CO /3 fec

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS	TRANSMITTAL NUMBER T50075

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

Priority: 1	Concern# XX-85-045-001

Category: 7	Confidentiality:___Yes____No(I&H)

Supervisor Notified:____Yes_X__No	Nuclear Safety Related__YES__

Concern: BELLEFONTE-TVA POLICY ALLOWS FOR PERSONEL TO BE SENT TO THE TEST SHOP AND IN A SHORT TIME BE CERTIFIED AS AN ELECTRICAL WELDER. THESE WELDERS DO PASS A STRICT TEST BUT THE TEST DOES NOT TEST THEIR ABILITY WHEN DEALING WITH ALL THE VARIABLES AN EXPERIENCED WELDER CAN HANDLE. INSUFFICIENT WELDER TRAINING

welding welders

[signature] JUL 19 1985
Manager, ERT	date

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

ERT_______

NSRS/ERT_______

NSRS ✓

OTHERS (SPECIFY)________________

[signature] 7/21/85
NSRS	date

353

WBDP 1 [illegible]

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50101

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

Priority: 1

Concern # WI-85-030-001

Category: 40

Confidentiality: NA YES NA NO (I&E)

Supervisor Notified: NA YES NA NO

NUCLEAR SAFETY RELATED YES

Concern: Welding and NDE program corrective action, as identified in OEDC Quality Assurance Evaluation No. OAE-2, dated September 1080, may not have been implemented for Watts Bar and other plants; the same/uncorrected problems were found to exist years later, and may still exist today. CI has no further information.

QA effect

No follow up required.

AUG 08 1985

MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT ____

NSRS ____

OTHERS (SPECIFY) _____

NSRS 8/12/85 DATE

ERT Form K

WCYICU DILCC 1 fsz

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50014

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

Priority: 1 Concern # IN-85-282-002

Category: 20 Confidentiality:__YES__NO (I & H)

Supervisor Notified: __YES X_NO NUCLEAR SAFETY RELATED _YES_

Concern: UNTIL RECENTLY, TVA WELD INSPECTORS REQUIRED ALL PIPE WELDS TO BE SURFACE GROUND TO A SMOOTH FINISH. THE CONCERN IS THAT SMOOTH GRINDING MAY ACTUALLY MASK A SURFACE DEFECT WHICH WOULD OTHERWISE BE DETECTABLE. NO FURTHER DETAILS WERE AVAILABLE.

[signature] 6/11/85
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT______

NSRS________

OTHERS (SPECIFY)______________________

[signature] 6/17/85
NSRS DATE

Request
welding
w/ Inspect

WCMHS DH

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS

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

Priority: 1

Concern # (I-85-413-WBN)
IN-85-273-001

Category: 33

Confidentiality: ____YES ____NO (I & E)

Supervisor Notified: ____YES XX NO

Safety Related - Yes

Concern: In Unit 1 reactor and aux bldgs., welds on pipe supports, specifically pipe supports installed over 6 feet off the floor, have not been painted after supports were completed and QC accepted. CI is concerned that rust/corrosion will occur to these unpainted welds and weaken the pipe supports thus preventing these pipe supports from performing intended functions they were designed for. CI did not specify any particular areas in reactor building but stated that pipe supports for fire protection system in aux bldg should be looked at. Construction Dept. concern. (Note: ERT is actively investigating this generic concern under different file numbers.)

No follow up required.

Unpainted pipe supports

[signature] AUG 15 1985
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT______

NSRS________

OTHERS (SPECIFY)________________

[signature] 8/19/85
NSRS DATE

WCMVLU UCLCC : F

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50105

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

Priority: 3

Category: 33

Supervisor Notified: X YES ___ NO

Concern # IN-85-127-001

Confidentiality: ___ YES ___ NO (I:

NUCLEAR SAFETY RELATED YES

Concern: Inconsistency in criteria used for weld inspection of Bergen-Paterson and TVA Hanger welds. B.P.welds look bad, while better looking TVA welds are rejected for cosmetic reasons. Hanger Fab Shop, located at south east corner of Turbine Bldg., has bins full of B.P. Hanger parts which exemplifies this concern. CI does not know specific hanger #'s or areas in the plant where this condition exists.

welding workmanship

No further follow up required.

[signature] AUG 08 1985

MANAGER, ERT — DATE

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) ___

[signature] 8/14/85

NSRS — DATE

ERT Form K

WCMVW DC 2CG;   T5R

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS   TRANSMITTAL NUMBER T50011

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

Priority: 1   Concern # IN-85-007-003

Category: 05   Confidentiality:____YES ___NO (I & H)

Supervisor Notified: ___YES _X_ NO NUCLEAR SAFETY RELATED YES

Concern: GENERAL LOOK OVER VENDOR WELDS SHOULD BE PERFORMED. VENDOR WELDS ARE NOT INSPECTED AT WBNP 1 OR 2. THEY ARE EASILY DISTINGUISHABLE FROM FIELD WELDS BECAUSE OF THE BAD QUALITY OF THE VENDOR WELDS. VENDOR WELDS WOULD NOT PASS THE SAME ACCEPTANCE

MANAGER, ERT   DATE 6/10/85

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

ERT ✓

NSRS/ERT______

NSRS________

OTHERS (SPECIFY) __ ______________________

NSRS   DATE 6/12/85

WOODD Dicc 15 73

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50147

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

Priority: 1 Concern # XX-85-086-002

Category: 33 Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO NUCLEAR SAFETY RELATED _YES_

Concern: Bellefonte: A design deficiency has a wrong weld required on Box Hangers which, if performed per design, causes the weld to run into the pipe (SS or Carbon Steel Code pipe). Construction dept concern. CI has no further information.

No followup required.

William [signature] SEP 24 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ___V__ RCS

OTHERS (SPECIFY) ____

Bruce L. Siefken 9/27/85

NSRS DATE

Design Adequacy

WCPIF Doc 1 f=2

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TRANSMITTAL NUMBER T50077

TO: Director - NSRS

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

Concern # PH-85-012-X03

Priority: 1

Confidentiality: ___YES ___NO (ISE)

Category: 33

NUCLEAR SAFETY RELATED yes

Supervisor Notified: ___YES ___NO

Concern: Welding and brazing inspection of safety-related HVAC ductwork was deleted subsequent to 1981 from the QA program without adequate justification. Watts Bar Units 1 & 2, safety related ductwork. Additional details are available in file.

QA Alert

JUL 19 1988

MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT ___

NSRS ___

OTHERS (SPECIFY) _____

NSRS 7/31/87 DATE

P5R

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50163

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

Priority: 1

Concern # XX-85=-065-001

Category: 40

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED _YES_

Concern: DURING SPRING OUTAGE (FEB. OR MAR. 1984) AT SEQUOYAH, CI WITNESSED 2 ISI INSPECTORS (NAMES KNOWN) FROM BASELINE GROUP PERFORMING "REMOTE VISUAL INSPECTIONS" ON ERCW SYSTEM RIGID PIPE SUPPORTS IN AUXILIARY BUILDING ELEVATION 669' ON HORIZONTAL PIPE RUNS OFF THE CEILING. CI DEFINES "REMOTE VISUAL INSPECTIONS" AS PERFUNCTORY, POORLY PERFORMED VISUAL INSPECTIONS MADE FROM REMOTE DISTANCES WITHOUT ACTUALLY VERIFYING THE MANDATORY INSPECTION ATTRIBUTES ON THE INSPECTION CHECKLIST. CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.

FOLLOWUP REQUIRED.

William S. Sebee [signature] OCT 07 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS _✓_____

OTHERS (SPECIFY) ____

Welding Inspections

Bruce L. Siefken [signature] 10/8/85

NSRS DATE

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

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 10 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-750-SQN

Subject PERFORMANCE OF REMOTE VISUAL INSPECTIONS/RIGID PIPE SUPPORT

Concern No. XX-85-065-001

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)

0155U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

INVESTIGATION REPORT NO. I-85-750-SQN

EMPLOYEE CONCERN NO. XX-85-065-001

SUBJECT: PERFORMANCE OF REMOTE VISUAL INSPECTIONS OF RIGID PIPE SUPPORT

DATES OF INVESTIGATION: OCTOBER 11-23, 1985

INVESTIGATOR: R C Sauer for — E. F. HARWELL — 12/9/85 — DATE

REVIEWED BY: R C Sauer — R. C. SAUER — 12/9/85 — DATE

APPROVED BY: for — M. S. KIDD — 12/9/85 — DATE

I. BACKGROUND

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern received by Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-065-001, stated:

> "During Spring outage (February or March 1984) at Sequoyah, CI witnessed 2 ISI inspectors (names known) from baseline group performing "Remote Visual Inspections" on ERCW system rigid pipe supports in auxiliary building elevation 669' on horizontal pipe runs off the ceiling. CI defines "Remote Visual Inspections" as perfunctory, poorly performed visual inspections made from remote distances without actually verifying the mandatory inspection attributes on the inspection checklist."

The QTC/ERT followup group was contacted to obtain the names of the two inspectors in order to narrow the scope of the investigation.

II. SCOPE

A. The scope of the investigation was determined from the concern of record to be that of two specific issues requiring investigation:

1. Inspectors made inadequate visual inspections of suspended, rigid ERCW pipe supports in the auxiliary building at the 669' elevation during the February/March 1984 time frame.

2. Visual inspections must be performed at close proximity to verify specific mandatory inspection attributes (particulars) on the inspection checklist.

B. To accomplish the investigation, NSRS reviewed a computer printout of hanger examinations performed during the Sequoyah unit 1 cycle 2 (U1C2) outage (ref. 3). A determination was made as to which ERCW hangers on the 669' elevation could have been examined by the inspectors named by the CI. These inspection reports were then reviewed. Interviews were conducted with three ISI inspectors, the inspection supervisor in charge during the outage, a plant Quality Engineering and Control Group supervisor, and the onsite Authorized Nuclear Inservice Inspector (ANII) from Hartford Steam Boiler Company. Thirty ERCW hangers from the group inspected by one of the named inspectors were reexamined under the cognizance of the NSRS investigator. The results of this reexamination were reviewed to determine if the supports had been examined properly and if the programmatic procedures used in the inspections were adequate.

III. SUMMARY OF FINDINGS

A. Requirements and Commitments

1. ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components"

2. 10CFR50.55a

3. Sequoyah Technical Specifications, Section 4.0.5 and 3.4.4.10

4. NQAM, Part II, Section 5.1, "Inservice Inspection - Nuclear Power Plant Components"

5. Area Plan Program Procedure 1502.7 (formerly DPM N80E3), "NDE Procedures Approved for Use on CSSC Items at All Nuclear Plants"

B. Findings

1. The two ISI inspectors (Individuals C and D) named by the CI did not work together on ERCW hanger inspections. Individual D worked mostly on ultrasonic examinations during the UIC2 outage.

2. Individual C performed 20 ERCW hanger visual inspections on elevation 669 on February 27, 1984, accompanied by Individual E (in training).

3. Both individuals (C and E), when interviewed, said it was impossible to perform an adequate visual inspection of a hanger without having hands-on access.

4. The onsite ANII witnessed inspections performed by this pair on several occasions but not on this particular day.

5. The inspection reports did not indicate any type examination other than direct visual was utilized.

6. Individual C submitted 31 ERCW support inspection reports for the day in question.

7. The results of reexamining all the supports during this investigation are as follows:

   a. Arc strikes and weld splatter were found on embedded steel but had been there since initial construction and were painted over.

   b. Some pipe clamps had unequal distance betwen the ears but had equal loading around the pipe.

   c. One support had been deleted, but it appeared on the weld support isometric. A support in a grouping of five was improperly tagged with the deleted support number which resulted in an extensive inspection sheet being generated.

   d. One base plate had a loose bolt, but a conduit had to be moved to determine this condition.

These discrepancies were evaluated by the cognizant Level III NDE engineer (Individual I) and determined to be acceptable (ref. 7).

IV. CONCLUSIONS AND RECOMMENDATIONS

A. The employee concern could not be substantiated for the following reasons:

1. The two inspectors named by the CI did not work together on ERCW hanger inspections.

2. The two inspectors who did work together said it was impossible to do an adequate inspection remotely and recognized that it would be a violation of procedures to do so. Both said that it was not worth jeopardizing their jobs to do a poor inspection since they were not being pressured to meet a particular quota of inspections each day.

3. The reexamination of ERCW pipe hangers conducted during this investigation did not identify any major problems.

4. A plant QA staff manager said that he had not heard of an incident such as this employee concern and would have been notified if it had been reported to a supervisor.

5. The onsite ANII said he witnessed the two individuals performing inspections and did not believe they would do anything other than a proper inspection.

B. The CI may have witnessed an ISI inspector performing a preliminary walkdown of the ERCW system, prior to inspection, where a determination is made concerning the need for metal identification tags, insulation removal, and scaffolding and misconstrued this as a remote visual inspection of hangers. The actual documented inspection takes place at a later time when the identified preliminary findings have been addressed.

DOCUMENTS REVIEWED IN INVESTIGATION I-85-750-SQN
AND REFERENCES

1. SQN Surveillance Instruction SI 114.1 Rev. 5, dated September 14, 1984, Unit 1 ASME Section XI In-Service Inspection Program

2. SQN Surveillance Instruction SI 114.1 data packages for the U1C2 outage

3. Printout of ERCW Hanger inspections performed during the unit 1 cycle 2 outage prepared by the NCO ISI Group

4. Inspection Records of visual inspections performed on ERCW hangers of Elevation 669 by Individual C during outage*

5. Preservice and Inservice Visual Examination Procedure, N-VT-1, Rev. 4, dated July 1, 1983

6. N-VT-1, Rev. 7, dated June 20, 1985

7. Memorandum (45D) from M. E. Gothard to Fonda Harwell dated November 27, 1985, entitled "Unit 1, Cycle 2, In-Service Inspection Employee Concern Allegation" with results of reexamination attached**

*These records are considered confidential as they contain the name of one of the individuals named in this employee concern.

**This document is considered confidential as it contains information critical to this investigation and is in the personal possession of E. F. Harwell.

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50163

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

Priority: 1

Concern # XX-85=-065-001

Category: 40

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED _YES_

Concern: DURING SPRING OUTAGE (FEB. OR MAR. 1984) AT SEQUOYAH, CI WITNESSED 2 ISI INSPECTORS (NAMES KNOWN) FROM BASELINE GROUP PERFORMING "REMOTE VISUAL INSPECTIONS" ON ERCW SYSTEM RIGID PIPE SUPPORTS IN AUXILIARY BUILDING ELEVATION 669' ON HORIZONTAL PIPE RUNS OFF THE CEILING. CI DEFINES "REMOTE VISUAL INSPECTIONS" AS PERFUNCTORY, POORLY PERFORMED VISUAL INSPECTIONS MADE FROM REMOTE DISTANCES WITHOUT ACTUALLY VERIFYING THE MANDATORY INSPECTION ATTRIBUTES ON THE INSPECTION CHECKLIST. CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.

FOLLOWUP REQUIRED.

William L. Elsen OCT 07 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓___

OTHERS (SPECIFY) ----------

welding Inspections

Bruce L. Siefken 10/8/85

NSRS DATE

~~WCPT~~
WCPWM D0700

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50144

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

Priority: 1 Concern: XX-85-083-001

Category: 33 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern: 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. CI has no further information.

No follow up required.

CC Hall for 9.19.85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

NSRS 9/26/85 DATE

Welding Inspection

cc

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50172

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

Priority: 1

Concern: XX-85-102-011
I-85-735-SQN

Category: 57

Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: NDE INSPECTORS CAN ONLY WRITE A NOTICE OF INSPECTION ON IN-SERVICE RELATED DEFECTS. PRESERVICE RELATED DEFECTS CAN ONLY BE IDENTIFIED BY A MAINTENANCE REQUEST. NUCLEAR POWER DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

[signature] 10/16/85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

Operations control

[signature] 10/21/85
NSRS DATE

TVA 64 (05-9-65) (OP-WP 5-85)

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 11 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-735-SQN

Subject NDE INSPECTORS CANNOT WRITE NOTICE OF INDICATION FOR PRESERVICE-RELATED DEFECTS

Concern No. XX-85-102-011

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)

0164U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-735-SQN

EMPLOYEE CONCERN: XX-85-102-011

SUBJECT: NDE INSPECTORS CANNOT WRITE NOTICE OF INDICATION FOR PRESERVICE-RELATED DEFECTS

DATES OF INVESTIGATION: OCTOBER 25 - NOVEMBER 5, 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. S. Kidd — M. S. KIDD — 12/11/85 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-85-102-001, stated:

> "Sequoyah: NDE inspectors can only write a Notice of Inspection (correction: Indication) on in-service related defects. Preservice related defects can only be identified by a Maintenance Request. Nuclear Power Dept. concern."

II. SCOPE

A. The scope of the investigation was determined from the stated concern of record to be two specific issues requiring investigation:

1. NDE inspectors report service-related defects only on Notices of Indication (NOI).

2. Preservice defects are reported only on a Maintenance Request (MR).

B. In conducting this investigation NSRS reviewed the requirements of the Nuclear Quality Assurance Manual (NQAM), plant surveillance instructions, and plant instructions which govern defect reporting. Nuclear Central Office ISI group managers and level III's, plant QC section supervisors, and Power Operations Training Center (POTC) NDE trainers were interviewed concerning the training, instructions, and practices of NDE inspectors on reporting defects. NSRS also reviewed random samples of NOI's generated during the present (Environmental Qualification) outage.

III. SUMMARY OF FINDINGS

A. Requirements and Commitments

1. ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."

2. Title 10 Code of Federal Regulations Part 50, "Domestic Licensing of Production and Utilization Facilities."

3. NQAM, Part II, Section 5.1, "Inservice Inspection - Nuclear Power Plant Components."

4. NQAM, Part II, Section 5.3, "Maintenance and Modification Inspection Program."

B. Findings

1. Part II, Section 5.1, of the NQAM (ref. 1) requires an NOI be written if a defect is found in the examination area for both preservice and inservice examinations.

2. Individuals A and C stated in their interview that ISI inspectors are instructed to prepare NOIs for either preservice or inservice inspection detected defects that are found within the scope of the examination area. However, if an inspector finds the examination area is not ready for inspection (i.e., needs polishing or grinding) he does not perform the inspection, but prepares an MR to have the area properly prepared for subsequent inspection. If a defect (i.e., arc strike) is found which is outside the scope of the examination area, is obviously not a service-related flaw and can be readily corrected, the inspectors are instructed to prepare an MR. The inspectors are instructed to notify their supervisor if significant items are found outside the examination area and the reporting is done via other nonconforming condition reporting methods.

3. Individual D stated in his interview that plant QC inspectors are instructed to prepare an NOI for defects found while performing an ASME Section XI preservice or inservice examination. However, defects found during examinations conducted after repairs or modifications for initial acceptance are recorded on the workplan data sheet, or the weld record data sheet, or on an MR, depending on the type work control document. This is in accordance with NQAM Part II, Section 5.3 (ref. 2) requirements and plant instructions.

4. Fifty-eight NOI's (ref. 8) were reviewed and determined that they appropriately referenced an MR to cover any corrective actions required.

5. Two hundred and twenty-seven MRs (ref. 8) were reviewed associated with inservice examinations to determine if any noted defects for which NOIs were not written should have been written. No inadequacies were identified. The MRs reviewed were determined to be properly written for corrections found during examination and coupled to an NOI, and as deficient items discovered outside the official inspection area but considered necessary for correction by the inspector.

IV. CONCLUSIONS AND RECOMMENDATIONS

The concern of record could not be substantiated because this investigation revealed that NOIs are prepared for both preservice and inservice defects found within the area of scope for ASME Section XI examinations.

DOCUMENTS REVIEWED IN INVESTIGATION I-85-735-SQN
AND REFERENCES

1. NQAM, Part II, Section 5.1, Revision dated March 28, 1984, "Inservice Inspection - Nuclear Power Plant Components"

2. NQAM, Part II, Section 5.3, Revision dated July 30, 1984, "Maintenance and Modification Inspection Program"

3. SQNP Surveillance Instruction SI-114.1, Revision 5, dated September 14, 1984, ASME Section XI, "In-service Inspection Program"

4. SQNP Technical Instruction TI-51, Revision 29, dated September 5 1985, "Assignment of Detailed Test Methods and Responsibility for Nondestructive Testing"

5. SQNP Administrative Instruction AI-12, Revision 20, dated August 2, 1985, "Adverse Conditions and Corrective Actions"

6. SQNP Modification and Additions Instruction M&AI-1, Revision 9, dated August 5, 1985 "Control of Weld Documentation and Heat Treatment"

7. SQNP Quality Assurance Section Instruction Letter No. 10.4, Revision 7, dated August 16, 1985, "Inspection - QC Inspections"

8. Sequoyah Notices of Indication (NOI) SQ-0139 through SQ-0202 (58 total) and 227 MRs involving ISI work beginning U1C3 up to November 2, 1985

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50172

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

Priority: 1

Concern: XX-85-102-011

I-85-735-SQN

Category: 57

Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: NDE INSPECTORS CAN ONLY WRITE A NOTICE OF INSPECTION ON IN-SERVICE RELATED DEFECTS. PRESERVICE RELATED DEFECTS CAN ONLY BE IDENTIFIED BY A MAINTENANCE REQUEST. NUCLEAR POWER DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOW UP REQUIRED.

[signature] 10/16/85

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

Operations control

[signature] 10/21/85

NSRS DATE

\NOOOO WIICO 15 r

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50147

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

Priority: 1   Concern # XX-85-086-003

Category: 33   Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO   NUCLEAR SAFETY RELATED _YES_

Concern: Sequoyah: A design deficiency has a wrong weld required on Box Hangers which, if performed per design, causes the weld to run into the pipe (SS or Carbon Steel Code pipe). Construction dept concern. CI has no further information.

No followup required.

William S. [signature] SEP 24 1985
MANAGER, ERT   DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓___ RCS

OTHERS (SPECIFY) ____

Bruce F. [signature] 9/27/85
NSRS   DATE

Design Adequacy

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50146

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

Priority: 1 Concern: EX-85-039-003

Category: 33 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: Watts Bar: Adesign deficiency has a "Wrong Weld" required on Box Hangers which, if performed per design, causes the weld to run into the pipe (ss or carbon steel code pipe). Const. Dept. concern. CI has no further information.

William A Lake SEP 20 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT ___

NSRS ✓

OTHERS (SPECIFY) ___

Bruce A. Crafton 9/25/85

NSRS DATE

design adequacy

WCPIF IDICCC

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50133

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

Priority: 1

Concern # XX-85-049-X03

I-85-502-SQN

Category: 88

Confidentiality: ___YES ___NO (I&H)

Supervisor Notified: ___YES _X_NO

NUCLEAR SAFETY RELATED _YES_

Concern: SEQUOYAH: WELDER CERTIFICATION CARD FALSIFIED. CONSTRUCTION DEPT CONCERN. CI HAS NO MORE INFORMATION.

QA Violation
Welding
Welders

William S. [signature]

MANAGER, ERT ______ DATE

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

ERT ___

NSRS/ERT ✓ Safety related report.

NSRS ______

OTHERS (SPECIFY) OGC - [illegible]

Bruce F. [signature] 7/6/85

NSRS ______ DATE

WCORm D1000

13

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50147

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

Priority: 1 Concern: XX-85-088-001

Category: 58 Confidentiality YES NO (I&H)

Supervisor Notified: YES NO X NUCLEAR SAFETY RELATED YES

Concern: Sequoyah: Welding certifications were altered by the use of correction fluid. This was done in Knoxville. Process marking such as file indexes and page counts were changed. Details known to QTC, withheld due to confidentiality. Const. Dept. concern. CI has no further information.

No followup required.

William A Lefler SEP 24 1985
MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT ____

NSRS ~~✓ ECS~~

OTHERS (SPECIFY) OGC

Bruce F Crafton 9/27/85
NSRS DATE

Welding
Welds

755

WCPQI
008

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50180

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

Priority: 1 Concern # XX-85-069-001 - R1

Category: 88 Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. DETAILS KNOWN TO QTC, WITHHELD DUE TO CONFIDENTIALITY. NUC POWER CONCERN. C/I HAS NO FURTHER INFORMATION.

William A. Tolan

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓__

OTHERS (SPECIFY) ____

operating personnel

Bruce F. Siegel

NSRS DATE

P:

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50174

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

Priority: 1 Concern: XX-85-069-001
I-85-737-SQN

Category: 88 Confidentiality YES NO (I&H)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH. MANY EMPLOYEES ARE CERTIFIED BUT ARE NOT QUALIFIED. THEY DO NOT HAVE ENOUGH ON THE JOB TRAINING (OJT) EVEN THOUGH IT IS DOCUMENTED THAT THEY DO HAVE ENOUGH OJT. THE CONCERN EXISTED FROM 1980 TO PRESENT. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NUC POWER CONCERN. CI HAS NO FURTHER INFORMATION.

SQN, SNSWA, EMPL

NO FOLLOW UP REQUIRED.

O K Theus 10/24/85
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) _____

Operations Personnel

Bruce L. Siefken 10/24/85
NSRS DATE

SEP 20 1985

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50140

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

Priority: 1 Concern # XX-85-069-X05

Category: 88 Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X__NO NUCLEAR SAFETY RELATED YES___

Concern: Employees' OJT (on-the-job training) records have been falsified. (Details to the specific case are known to QTC and withheld to maintain confidentiality). CI has more information. Nuclear Power.

Changed to correct (add) location of concern. Concern transferred to concern ~~013~~ X13 cDaly 11-26-85
cCHin 11.26-85

SEP 10 1985
MANAGER, ERT DATE

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

ERT ~~__~~

NSRS/ERT _____

NSRS _____

OTHERS (SPECIFY) QC

NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50140

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

Priority: 1

Concern # XX-85-069-X05

Category: 88

Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X__NO

NUCLEAR SAFETY RELATED YES___

Concern: SAI 1 Employees' OJT (on-the-job training) records have been falsefied. (Details to the apecific case are known to QTC and withheld to maintain confidentiality). CI has more information. Nuclear Power.

QA Violation

SEP 10 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ______

OTHERS (SPECIFY) ____QC

NSRS 9/16/85 DATE

QUALITY
TECHNOLOGY
COMPANY

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

November 27, 1985
ERT:QTC85.1410

Mr. Bruce Siefken
Nuclear Safety Review Staff
Knoxville, Tennessee
E3B37C-K

Dear Mr. Siefken:

SUBJECT: ERT CONCERN NUMBER XX-85-069-X05

Please acknowledge receipt of the above referenced concern. It has been changed to correct (add) location of concern. It has been transferred to concern X13.

Sincerely,

QUALITY TECHNOLOGY COMPANY

W. S. Schum, Program Manager
EMPLOYEE RESPONSE TEAM

WSS/jlr
Enclosure (1)

cc: Bob Sauer

12/23/85--JTH
cc: H. S. Sanger, E11B33 C-K

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER TS0140

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

Priority: 1 Concern # XX-85-069-X05

Category: 88 Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X__NO NUCLEAR SAFETY RELATED YES___

Concern: Employees' OJT (on-the-job training) records have been falsified. (Details to the specific case are known to QTC and withheld to maintain confidentiality). CI has more information. Nuclear Power.

Changed to correct (add) location of concern. Concern transferred to concern ~~013~~ X13 cDaly 11-26-85

CCHin 11-26-85

[signature] 9/26/85

[signature] SEP 10 1985

MANAGER, ERT DATE

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

ERT ___ [signature]

NSRS/ERT _____

NSRS _____

OTHERS (SPECIFY) QC

[signature] 9/16/85

NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50140

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

Priority: 1 Concern # XX-85-069-X05

Category: 88 Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X__NO NUCLEAR SAFETY RELATED YES___

Concern: SQN Employees' OJT (on-the-job training) records have been falsefied. (Details to the apecific case are known to QTC and withheld to maintain confidentiality). CI has more information. Nuclear Power.

QA Violation

SEP 10 1985

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ______

OTHERS (SPECIFY) QTC

NSRS DATE

WCMEQ DY

EMPLOYEE CONCERN ASSIGNMENT REQUEST

To: Director - NSRS TRANSMITTAL NUMBER T50039

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

Priority: 1 Concern # XX-85-013-001

Category: 33 Confidentiality: __YES__NO (I & H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED _YES_

Concern: 309 WELD ROD WAS USED TO WELD 316 STAINLESS PIPE AT SEQUOYAH UNIT 1.

6/19/85

MANAGER, ERT DATE

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

ERT ✓

NSRS/ERT_____

NSRS_____

OTHERS (SPECIFY)_____

6/21/85

NSRS DATE

REQUEST FOR REPORTABILITY EVALUATION

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

No X Yes ____ If Yes, Explain: _____

_____

_____

OR

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

No X Yes ____ If Yes, Explain; _____

_____

_____

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

This Condition was Identified by: W M Lenyszyn for — ERT Group Manager — 365-4464 — 8/23/85 — Phone Ext.

O B Thies — ERT Project Manager — 365-4444 — Phone Ext.

Acknowledgment of receipt by NSRS

Signed _____ Date 6/29/85 Time 1440

ERT Form M

REQUEST FOR REPORTABILITY EVALUATION

1. Request No. XX-85-013-001 _____
(ERT Concern No.) (ID No., if reported)

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

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

309 Weld rod was used to weld 316 stainless steel pipe at Sequoyah.

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

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

NO X YES ___ If Yes, Explain: _____

AND

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

No X Yes ___ If Yes, Explain: _____

OR

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

No X Yes ___ If Yes, Explain: _____

OR

ERT Form M

ERT INVESTIGATION REPORT

CONCERN NO: XX-85-013-001

CONCERN: 309 weld rod was used to weld 316 stainless pipe at Sequoyah.

INVESTIGATION
PERFORMED BY: William M. Kemp, Jr.

DETAILS

Personnel Contacted: Confidential

Codes & Reference Material:

ASME IX 1980 Welding
Hobart Pocket Welding Guide
ASME II Part A&C Material Specifications
Specifications for SFA5.4 filler material
Specifications for SA 312 Grade 316 Alloy Pipe
Detailed Weld Procedures: GMA88-B-6*
GMA88-B-6A*
GM88-B-2*
GM88-B-5*
*Applicable Revisions

Requirments

ASME Section IX for procedure and performance qualifications was reviewed for the essential variables applicable to E-309 & E-308.

These variables include:

QW-404.4:"A change from one F-number in QW 432 to any other F-number or any other filler not listed in QW-432" (ie E308 & E309 are ASME SFA5.4, F5, A8.) Either filler material is acceptable.

DETAILS,continued

QW-404.5:"For the ferrous materials in QW 422 a change in the chemical composition of the weld deposit from one A-number to any other A-number in QW-422."
(ie-E308 & E309 are ASME SFA 5.4,F5,A8)
Either filler material is acceptable.

ASME Section II,Part C-Filler Metal states:
"SFA 5.4 "E309, E309cb, E309mo, all have a tensile strength min. PSI of 80,000".
SFA-5.4's Identical with the requirements of AWS A5.4 69

ASME Section II Part A- Material Specifications states for SA-312 TP316L min. tensile strength shall be 70,000 psi. Therefore the filler metal is ≥ 70,000 PSI required for the base material.
SA-312 TP316 L is designated P-8 material.

FINDINGS:

Based on the review of the ASME code requirements and the applicable documentation and procedures, the following is determined:

E309 filler metal (electrode) is compatable to the A&F number designations for E308 and E309.

For the base material, there is no essential variable violation to the code and is allowed per applicable Weld Procedure Specification/Procedure/Preformance Qualification Record.

CONCERN NO: XX-85-013-001

DETAILS,continued

CONCLUSIONS:

Based on the findings in this investigation a change from E308 to E309 (same A&F designation) is not a violation of the code or procedure. The concern as stated may be true. However, the change from 308 to 309 filler metal has no impact on weld quality. This concern is closed.

PREPARED BY [signature] 8/22/85
DATE

REVIEWED BY [signature] 8/22/85
DATE

Report Reviewed + Accepted.
[signature] 8/27/85
NSRS

EMPLOYEE CONCERN DISPOSITION REPORT

CONCERN NO. XX-85-013-001

DATE OF PREPARATION: 9-9-85

CONCERN: 309 WELD ROD WAS USED TO WELD 316 STAINLESS PIPE AT SEQUOYAH UNIT 1.

INVESTIGATION PERFORMED BY: ERT

FINDING(S): BOTH E308 AND E309 FILLER MATERIAL MAY BE USED FOR WELDING 316 BASE MATERIAL. WELDING WITH E309 FILLER MATERIALS IS ALLOWED PER APPLICABLE WELD PROCEDURE SPECIFICATION/PROCEDURE/PERFORMANCE QUALIFICATION RECORD.

CORRECTIVE ACTION(S) NONE REQUIRED

CLOSURE STATEMENT: THE CONCERN AS STATED MAY BE TRUE, HOWEVER, USE OF E309 FILLER MATERIAL IS ACCEPTABLE AND HAS NO IMPACT ON QUALITY.

ERT Form Q

INVESTIGATIVE PLAN

File No. XX-85-013-001

Priority 1

Reportable)0

Substantiated Yes ☐ No ☒

CONCERN	ACTION ITEMS	INVESTIGATOR	SCHEDULE DATE	COMPLETE DATE
309 rod was used to weld stainless steel pipe (316) at Sequoyah Unit 1	1. Review applicable codes/procedures & WPS for requirements.	WMK	7-15-85	7-30-85
	2. Review welding perameters for welding 316 stainless steel.	WMK	8-5-85	8-5-85
	3. Determine if 309 rod can weld 316 base metal	WMK	8-15-85	8-15-85
	4. Evaluate and establish report	WMK	8-22-85	8-22-85

INVESTIGATION PLAN

Concern Closed ____

File No. WI-85-020

Reportable NO

Priority 4

Substantiated Yes ☐ No ☒

CONCERN	ACTION ITEMS	INVESTIGATOR	SCHEDULE DATE	COMPLETE DATE
Supervision (name given) is telling employees that the reason people are getting laid off is because the concerns identified by the ERT have delayed fuel load.	A. Identify position of the supervision involved and obtain organizational chart for that supervisor's unit.	Wilson	8-6-85	8-6-85
	B. By interviews of the unit personnel determine if supervisor made such a statement and, if so when	Wilson	8-9-85	8-9-85 8-13-85
	C. Interview supervisor to confirm if such statement was made and why.	Wilson	8-9-85	8-13-85
	D. Report results of this investigation.	Wilson	8-14-85	8-19-85

PSF

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50162

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

Priority: 1   Concern # XX-85-101-006

Category: 07   Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X_NO   NUCLEAR SAFETY RELATED _YES_

Concern: SEQUOYAH: A WELDER PERFORMED WELDS WITHOUT HAVING THE PROPER CERTIFICATION. DETAILS KNOWN TO QTC, WITHELD DUE TO CONFIDENTIALITY. CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.

NO FOLLOWUP REQUIRED.

[signature] OCT 03 1985
MANAGER, ERT   DATE

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

ERT _√_

NSRS/ERT _____

NSRS ______

OTHERS (SPECIFY) ____

Welding
Welders

[signature] 10/8/85
NSRS   DATE

7 WCMHC new DO2 13 PS

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50167

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

Priority: 1

Concern # XX-85-041-001

Category: 33

Confidentiality: _YES _NO (I&H)

Supervisor Notified: _X_YES ___NO

NUCLEAR SAFETY RELATED _YES_

Concern: AT SEQUOYAH, A WELD WAS MADE IN '79 OR '80 IN DIESEL GENERATOR BUILDING, UNIT 1, USING THE WRONG TYPE ROD TO WELD CARBON STEEL PIPE TO STAINLESS STEEL PIPE. A COVER PASS USING THE CORRECT ROD WAS RUN OVER THE EXISTING WELD. CONSTRUCTION DEPT CONCERN. CI HAS NO MORE INFORMATION.

O. L. Thero 10/10/85

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓___

OTHERS (SPECIFY) ____________________

Welding Workmanship

[signature] 10/11/85

NSRS DATE

WCMCW DC200 13

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50158

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

Priority: 1 Concern: XX-88-100-001

Category: 33 Confidentiality YES NO (X)

Supervisor Notified: X YES NO NUCLEAR SAFETY RELATED YES

Concern: Reportedly, an undetermined number of welds may have been improperly repaired. Details known to QTC, withheld due to confidentiality. Constr. Dept. concern. CI has no further information.

No followup required.

MANAGER, ERT 10/19/5
DATE

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

ERT ✓

NSRS/ERT _____

NSRS _____

OTHERS (SPECIFY) _____

Welding Workmanship

NSRS 10/19/5
DATE

13 new

WCMHC D02

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50175

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

Priority: 1

Concern # XX-85-108-001

Category: 33

Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X_NO

NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH: C/I STATES WELDS IN UNIT #1 ACCUMULATOR ROOMS AND/OR FAN ROOMS WERE NEVER INSPECTED. TIME FRAME IS NINE OR TEN YEARS AGO. WELDS ON 2" STAINLESS STEEL (SOCKET WELDS) AND HANGERS ON THE RADIUS PIPE IN THOSE AREAS. CONST. DEPT. CONCERN. C/I HAS NO ADDITIONAL INFO.

William S. Acker NOV 02 1985
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ✓

OTHERS (SPECIFY) ______

Welding Inspection

Bruce S. Loofker 11/6/85
NSRS DATE

SQN

WCPIF
D08

13
new

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50175

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

Priority: 1 Concern # XX-85-108-002

Category: 33 Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X_NO NUCLEAR SAFETY RELATED YES

Concern:SEQUOYAH: PROGRAMATIC BREAKDOWN ON THE WELD INSPECTION PROCESS. NINE OR TEN YEARS AGO C/I STATES THAT SOME WELDS ON 2'' STAINLESS STEEL SOCKET WELDS WERE NOT INSPECTED AS REQUIRED. CONST. DEPT. CONCERN. C/I HAS NO ADDITIONAL INFO.

[signature] NOV 02 1985
MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ___✓___

OTHERS (SPECIFY) _____

welding Inspection

Bruce L. Crofton 11/6/85
NSRS DATE

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50092

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

Priority: 1

Concern # XX-85-054-001

Category: 39

Confidentiality: ___YES ___NO (I&E)

Supervisor Notified: ___YES X NO

NUCLEAR SAFETY RELATED YES

Concern: Sequoyah- QC holdpoints are signed off by craftsmen(craft known) performing the work. Personal friendship between inspectors & craft allow this to occur without being reported. Time frame is between 1979 to 1984. No specifics provided.

JUL 24 19

MANAGER, ERT DATE

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

ERT ____

NSRS/ERT ____

NSRS ✓

OTHERS (SPECIFY) _____

1/10/85

NSRS DATE

TVA 64 (OS 5 65) (OP-WP 7-84)
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 : NOV 29 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-346-SQN

Subject QC HOLDPOINT SIGNOFF VIOLATION

Concern No. XX-85-054-001

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

R. C. Sauer
Director, NSRS/Designee

RCS:JTH
Attachment
cc (Attachment):
G. B. Kirk, SQN
R. C. Parker, LP4N44A-C
QTC/ERT, Watts Bar Nuclear Plant
J. H. Sullivan, SQN
W. F. Willis, E12B16 C-K (4)

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-346-SQN

EMPLOYEE CONCERN: XX-85-054-001

SUBJECT: QC HOLDPOINT SIGNOFF VIOLATION

DATES OF INVESTIGATION: SEPTEMBER 23-30, 1985

INVESTIGATOR: E. F. Harwell — E. F. HARWELL — 11/25/85 — DATE

REVIEWED BY: R. C. Sauer — R. C. SAUER — 11/25/85 — Date

APPROVED BY: M. S. Kidd — M. S. KIDD — 11/26/85 — DATE

I. BACKGROUND

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern as received by the Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-054-001, stated:

> "Sequoyah - QC holdpoints are signed off by craftsmen (craft known) performing the work. Personal friendship between inspectors and craft allow this to occur without being reported. Time frame is between 1979 to 1984. No specifics provided."

Further information was requested from the ERT follow-up group regarding whether this concern involved Construction or Nuclear Power-type holdpoints, type work, and crafts involved. QTC relayed that the CI identified the crafts as Construction fitters and welders. Although the CI did not identify the type work, it is assumed that it dealt with welding during pipe installation. The CI also identified another individual (individual A) who was familiar with the above practice.

II. SCOPE

A. The scope of the investigation is defined by the concern of record which entails determining if QC holdpoints had been signed off by craftsmen because of their friendliness with inspectors during the period 1979 to 1984.

B. Construction procedures and instructions were reviewed to determine the documentation required for welding, fitup, and QC holdpoint signoff that were applicable for the timeframe of interest. A random review of computer weld data cards was performed, including operation checklists and individual inspections, for welds performed during the subject concern time period. Interviews were conducted with 18 personnel of various welding-related backgrounds including fitter welders, fitters, fitter foremen, welding engineers, weld inspectors, lead inspectors, records clerk, and supervision. Also interviewed was the individual named by the CI as having knowledge concerning this type occurrence.

III. SUMMARY OF FINDINGS

A. Requirements and Commitments

1. ANSI Standard B31.1.0 (1967), "Power Piping" - Governed installation and inspection requirements for piping systems other than TVA Safety Class A, B, C, and D.

2. ANSI Standard B31.7 (1969) and 1970 Addendum, "Nuclear Power Piping" - Governed installation and inspection requirements for TVA Safety Class A, B, C, and D piping systems.

3. CONST-QAP 9.01, "Assignment of Special Processes."

4. TVA General Construction Specification G-29, "Process Specifications for Welding, Heat Treatment, Nondestructive Examination, and Allied Field Fabrication Operations."

5. TVA 47B333 series drawings, "Weld and Nondestructive Examination Procedure Assignment."

B. Findings

1. The Sequoyah Construction Procedures and Instructions were evaluated and determined that adequate controls were written to prohibit signoff of QC holdpoints by anyone other than a qualified, certified inspector. The use of computerized operation checklists, individual inspection data cards, and shift inspection logs provided a crosscheck to ensure that inspections were properly done by qualified individuals. When holdpoints were missed, corrective actions were taken to rectify.

2. Construction Procedure W-3 "Weld Procedure Assignment and Welding Surveillance" did allow the foreman to verify preheat on welds on subsequent shiftwork after it had been released for welding by the Weld Inspection Unit. He denoted this on the back of the operation checklist. Also, he could note any additional welders that worked on the weld joint. This normally applied to heavy support welds. However, per discussions with welding engineers and lead inspectors for critical pressure boundary welds, an inspector was present almost on a continual basis. In addition, to assure compliance with welding parameters, a general welding surveillance of each work area was required twice per shift by Standard Operating Procedure SOP-700, "Weld Surveillance".

3. A random sample of weld data cards was compared to the operation checklist and no discrepancies were found.

4. For nonsafety class welds, the craft foreman was and is responsible for assuring that correct procedure was used, correct filler material was used, and a sound weld was installed.

5. After the weld data cards were turned in, the QC Records Unit checked the cards for proper signoff by a qualified individual with up-to-date certifications and signature verification. Any discrepancies were returned to the Welding Inspection Unit for correction or resolution.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. The allegation appears to be unsubstantiated for the following reasons:

- The individual identified by the concerned individual as having knowledge concerning this problem did not acknowledge seeing any craft personnel signing any QC documentation or know of any instances where it occurred.

- The weld documentation system with all its crosschecks and reviews would have a high probability of not allowing the signoff of a QC holdpoint by an unqualified individual.

- None of the people interviewed knew of any instance where a craftsman signed off on a QC holdpoint.

- Since inspections were performed by the next available inspector, assurance of getting a particular inspector (personal friend) could not happen with any degree of certainty.

B. The concerned individual may have witnessed the signing of the operation checklist on the back for preheat verification and additional welder assignments (as permitted by procedures) and misconstrued this as a QC holdpoint signoff. The operation checklist was considered, at that time, to be an information tool to assist the foreman in controlling the work and not a QC record, except when additional welders were noted on the back for completing the weld.

SEQUOYAH - WELD SIGNOFF CHRONOLOGY

before Jan. 1977	Welding was governed by M-3, "Welding Surveillance and Weld Procedure Assignment," and M-7, "Erection and Documentation Requirements for Piping Systems"
January 31, 1977	Joe Wilkins, New Project Construction Engineer, mandated that the welding records be computerized. W-3, "Weld Procedure Assignment and Welding Surveillance," was issued to use computer data cards for welding documentation.
February 11, 1977	M-3 deleted.
April 25, 1977	Standard Operating Procedure SOP-700, "Welding Surveillance," was issued that required each rod shack inspection team to perform a random surveillance of welding in their area twice each shift and document results.
October 14, 1977	W-3 was revised to include an operation checklist that identified welding procedure, size and configuration of weld joint, and QC holdpoints. Holdpoints had to be signed off on the checklist before next operation was to commence. The operation checklist remained in the area of the weld.
December 4, 1978	W-3 revised to allow craft foreman to verify preheat on subsequent shifts and sign back of checklist. However, the initial inspection, fitup release, and preheat verification was done by the Weld Inspection Unit inspector.

DOCUMENTS REVIEWED IN INVESTIGATION I-85-346-SQN
AND REFERENCES

1. SNP Construction Procedure M-3, Revision 2, dated May 1, 1975, "Welding Surveillance and Weld Procedure Assignment"

2. SNP Construction Procedure M-7, Revision 14, dated November 19, 1976, "Erection and Documentation Requirements for Piping Systems"

3. SNP Construction Procedure W-3, Revision 3, dated December 4, 1978, "Weld Procedure Assignment and Welding Surveillance"

4. SNP Standard Operation Procedure SOP-700, Revision 0, dated April 25, 1977, "Weld Surveillance"

5. SNP Inspection Instruction No. 63, Revision 13, dated May 20, 1983, "Piping Inspection"

6. TVA General Construction Specification G-29, "Process Specifications for Welding, Heat Treat, Nondestructive Examination, and Allied Field Fabrication Operations" dated March 9, 1983

7. TVA General Construction Specification G-43, "Support and Installation of Piping Systems in Category I Structures," Revision 8, dated August 8, 1985

8. Microfilm copies of computer weld data cards for various NDE examination and operation checklist cards

9. Standard Operation Procedure SOP-550, Revision 0, dated December 14, 1977, "Review of Quality Assurance Records"

Note: Document Revision Histories were also evaluated for the entire timeframe in question.

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TRANSMITTAL NUMBER T50092

TO: Director - NSRS

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

Concern # XX-85-054-001

Priority: 1

Confidentiality: ___YES ___NO (I&E)

Category: 39

NUCLEAR SAFETY RELATED YES

Supervisor Notified: ___YES X NO

Concern: Sequoyah- QC holdpoints are signed off by craftsmen(craft known) performing the work. Personal friendship between inspectors & craft allow this to occur without being reported. Time frame is between 1979 to 1984. No specifics provided.

JUL 24 19

MANAGER, ERT DATE

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

ERT ____

NSRS/ERT ____

NSRS ✓

OTHERS (SPECIFY) ____

1/10/85

NSRS DATE

347

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50138

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

Priority:1 Concern:XX-85-068-007

Category: 71 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern:Sequoyah - TVA may have manufactured a spool piece to replace, under ASME Section XI, a DRAVO ASME-class spool piece. When the spool piece was replaced, the Code nameplate from the DRAVO spool piece was removed, and affixed to the TVA manufactured spool. This may have been noted by a cognizant inspection individual (position known), and not reported due to the individual not wanting to get involved. Construction dept. concern. CI has no further inforamtion.

QA Effect

No follow up required.

MANAGER, ERT 9/6/85 DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓__ MG.

OTHERS (SPECIFY) ________________

NSRS 9/16/85 DATE

TVA 64 (05-9-65) (OP-WP-5-85)

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 10 1985

SUBJECT: NUCLEAR SAFETY REVIEW STAFF INVESTIGATION REPORT TRANSMITTAL

Transmitted herein is NSRS Report No. I-85-636-SQN

Subject TVA MANUFACTURE OF A DRAVO ASME-CLASS SPOOL PIECE

Concern No. XX-85-068-007

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)

0150U

TENNESSEE VALLEY AUTHORITY

NUCLEAR SAFETY REVIEW STAFF

NSRS INVESTIGATION REPORT NO. I-85-636-SQN

EMPLOYEE CONCERN: XX-85-068-007

SUBJECT: TVA MANUFACTURE OF A DRAVO ASME-CLASS SPOOL PIECE

DATES OF INVESTIGATION: OCTOBER 8 - NOVEMBER 21, 1985

LEAD INVESTIGATOR: C. L. Breeding — C. L. BREEDING — 12/6/85 DATE

REVIEWED BY: R. C. Sauer — R. C. SAUER — 12/6/85 DATE

APPROVED BY: for M. S. Kidd — M. S. KIDD — 12/6/85 DATE

I. BACKGROUND

A Nuclear Safety Review Staff (NSRS) investigation was conducted to determine the validity of an expressed employee concern received by Quality Technology Company (QTC)/Employee Response Team (ERT). The concern of record, as summarized on the Employee Concern Assignment Request Form from QTC and identified as XX-85-068-007, stated:

> "Sequoyah - TVA may have manufactured a spool piece to replace, under ASME Section XI, a DRAVO ASME-class spool piece. When the spool piece was replaced, the Code nameplate from the DRAVO spool piece was removed, and affixed to the TVA manufactured spool. This may have been noted by a cognizant inspection individual (position unknown), and not reported due to the individual not wanting to get involved."

The ERT followup group was contacted for further details and information. None was available because they received this concern from an anonymous telephone call.

II. SCOPE

A. The scope of this investigation as determined from the stated concern to be that of four issues requiring investigation.

1. TVA may have manufactured an ASME Section XI spool piece.

2. TVA replaced a DRAVO spool piece with TVA manufactured spool piece.

3. The code nameplate was moved from the DRAVO piece to the TVA piece.

4. TVA inspector may have been aware of switch but did not report it.

B. The concern did not specify the location or equipment or piping that is of concern; therefore, a search was made for all DRAVO pipe supplied to Sequoyah. Also, the concern mentioned the ASME code used for the inservice inspection of nuclear power plant components; therefore, the requirements of this code for the Sequoyah plant were researched. The ability of TVA to manufacture spool pieces was also investigated.

III. SUMMARY OF FINDINGS

A. <u>Requirements and Commitments</u>

1. 10CFR50, Appendix A, General Design Criterion 1, "Quality Standards and Records," requires that structures, systems, and components important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of safety functions to be performed.

2. 10CFR50.55a, "Codes and Standards," requires that components of the reactor coolant pressure boundary be designed, fabricated, erected, and tested in accordance with the requirements for class 1 components of section III of the ASME Boiler and Pressure Vessel Code or equivalent quality standards. This requirement went into effect for nuclear plants with construction permits submitted after January 1, 1975. Sequoyah had already received a construction permit.

3. The original design of Sequoyah was in accordance with ANSI B31.1 code for power piping with installation and inspection to ANSI B31.7. Additions and modifications at Sequoyah were made in accordance with the ASME code after April 1973 as stated in Sequoyah Nuclear Plant Design Criteria Manual, SQN-DC-V-3.0, "General Design Criteria for the Classification of Piping, Pumps, Valves, and Vessels," table 3.1-2. This table lists the code requirements for the plant design and their related TVA safety class.

4. The TVA Nuclear Quality Assurance Manual (NQAM), Part II, Section 2.3, revision 8/20/84, establishes controls to assure that repairs and replacements of ASME Section XI components are performed in accordance with ASME Section XI, IWA-4000 and IWA-7000, requirements.

5. TVA Construction Specification N2G-877, "Identification of Structures, Systems, and Components Covered by the Sequoyah Nuclear Plant Quality Assurance Program," requires certified material test reports (CMTRs), material traceability, and inspection documentation for Quality Level I materials.

6. The TVA Division of Nuclear Power Procedure DPM-N76A10, revised September 28, 1984, "Purchase Specifications for CSSC Metallic, Wire, and Cable Used Inside Primary Containment, Welding, and Brazing Materials, Valve Parts, and Pump Parts," specifies the "Code of Record," for Sequoyah. The code listed is ANSI B31.7-1971 Addenda.

7. Sequoyah Nuclear Plant Standard Practice SQA162, "Purchase Specifications for CSSC Materials," also lists ANSI B31.7 as the "Code of Record."

B. Findings

1. TVA has manufactured spool pieces at Sequoyah. Spool pieces are generally pipes, but sometimes the term "spool piece" is used for a pipe with flanges on each end that can be bolted into place. To manufacture one requires that a longer pipe be cut (thereby yielding two spool pieces) and flanges be welded on to make it a bolt-in "spool piece." TVA does this type of work

in compliance with ANSI B31.1 and B31.7 the "Codes of Record" for the plant. Fabricating pipe pieces to replace worn out, damaged, or otherwise unsuitable pipe is a normal part of operating and maintaining a power plant. A search of the maintenance records for spool pieces fabricated at Sequoyah was made. Several have been produced since the plant went into operation. A detailed review of the maintenance requests and inspection reports for four examples of this work was made. Maintenance requests for the fabrication of spool pieces in the component cooling system (MR 0654546), water treatment system (MR A049809), Auxiliary Feedwater System (MR A237954), and Reactor Coolant Pump Motor oil cooler (MR A299465) were reviewed along with the QA inspection reports of this work (refs. 14-17). No deviations from TVA procedures or code requirements were found.

2. No record of any DRAVO spool pieces having been delivered can be found at Sequoyah. DRAVO was contacted, and they have no record of supplying any spool pieces to Sequoyah. TVA records at the site and in the Chattanooga central offices show no contracts with DRAVO for pipe or spool pieces.

3. Spool pieces do not normally have ASME nameplates affixed. Nameplates are used on pressure vessels and other pressure containing devices but not on pieces of pipe. Most of the pressure vessels, piping, and other equipment at Sequoyah was designed and procured under the ANSI B31.1 code that did not require nameplates. Therefore, it is unlikely that a nameplate could have been moved since almost none exist at Sequoyah and there is no requirement for a nameplate on a new piece of pipe. Some of the spool pieces fabricated at Sequoyah were for temporary service such as flood mode crossties or nitrogen filling of steam generators. These temporary spool pieces are often reused and are labeled when built so they can be identified when needed.

4. It is permissible, even required in some cases, for the pipe identification number (the heat number) to be transferred from the original pipe to any spool piece cut from that pipe. An inspector is required to witness this activity. It is possible that an observer of this activity could have misconstrued the transfer of heat numbers to be the moving of a nameplate.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. This employee concern is not substantiated for the following reasons:

1. No evidence of DRAVO spool pieces could be found at Sequoyah, and no record of their purchase was found.

2 Even though TVA does manufacture spool pieces for repair, replacement, or modification of plant piping systems, there could have been no exchange with DRAVO.

3. Code nameplates are not required at Sequoyah; therefore, the concern about any removal or attachment is not valid. No evidence of such activity was found in this investigation.

4. Inspection personnel at Sequoyah are familiar with the requirements for spool piece manufacture and know that nameplates are not required. There would, therefore, be no reason for an inspector to report an activity that did not violate a requirement or procedure.

B. This concern appears to have resulted from a misconception or misunderstanding of the requirements for producing spool pieces at Sequoyah. It is possible that an observer misconstrued the transfer of piping heat numbers to be the transfer of a nameplate. No action at Sequoyah is required.

DOCUMENTS REVIEWED IN INVESTIGATION I-85-636-SQN
AND REFERENCES

1. ASME Boiler and Pressure Vessel Code, Section XI, Article IWA-7000, IWA-4000, and Section III

2. 10CFR Part 50, Appendix A, General Design Criterion 1, "Quality Standards and Records"

3. ANSI B31.1 - 1971 Addenda, "Power Piping"

4. ANSI B31.7 - 1971 Addenda, "Nuclear Power Piping"

5. NQAM Part II, Section 2.3, Revision 8/20/84, "Repairs and Replacement of ASME Section XI Components"

6. TVA Construction Specification N2G-877, "Identification of Structures, Systems, and Components Covered by the Sequoyah Nuclear Plant Quality Assurance Program," revised May 3, 1985

7. TVA Construction Specification N2M-865, "Field Fabrication, Assembly Examination, and Tests for Pipe and Duct Systems"

8. Division of Nuclear Power, Division Procedure DPM-N76A10, Revised September 28, 1984, "Purchase Specifications for CSSC Metallic Wire and Cable Used Inside Primary Containment, Welding and Brazing Materials, Valve Parts, and Pump Parts"

9. Sequoyah Nuclear Plant Standard Practice SQA162, "Purchase Specifications for CSSC Material," dated October 9, 1985, Rev. 0

10. U.S. NRC Regulatory Guide 1.26, Rev. 3, dated February 1976, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive Waste-Containing Components of Nuclear Power Plants"

11. Sequoyah Nuclear Plant Design Criteria Manual, SQN-DC-V-3.0, "General Design Criteria for the Classification of Piping, Pumps, Valves, and Vessels"

12. SNP Construction Procedure No. P-34, "Heat Number Validation," revised December 12, 1978

13. Sequoyah FSAR, Chapter 3

14. MR 064546, dated January 8, 1981, "Fabricate Spool Piece for the Component Cooling System"

15. MR A049809, dated January 13, 1982, "Fabricate and Install Spool Piece for Train A DI," for Water Treatment System

16. MR A0237954, dated August 15, 1984, "1-PIPG-003, Rework to Venturi Spool Section to Match Length of Cavitating Venturi Sections," for the Auxiliary Feedwater System

17. MR A299465, dated September 20, 1985, "1-068, Fabricate Spool Piece for No. 1 RCPM 0.1 Cooler," for the Reactor Coolant Pump Motor Oil Cooler

fsr

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS TRANSMITTAL NUMBER T50138

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

Priority:1 Concern:XX-85-068-007

Category: 71 Confidentiality YES NO (I&H)

Supervisor Notified: YES X NO NUCLEAR SAFETY RELATED YES

Concern:Sequoyah - TVA may have manufactured a spool piece to replace, under ASME Section XI, a DRAVO ASME-class spool piece. When the spool piece was replaced, the Code nameplate from the DRAVO spool piece was removed, and affixed to the TVA manufactured spool. This may have been noted by a cognizant inspection individual (position known), and not reported due to the individual not wanting to get involved. Construction dept. concern. CI has no further inforamtion.

QA Effect

No follow up required.

MANAGER, ERT DATE 9/6/85

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

ERT ___

NSRS/ERT _____

NSRS ✓ MG.

OTHERS (SPECIFY) ______

NSRS DATE 9/16/85

PSTC

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 # SQM-S-001-001
I-85 -SAN

Category: 33 Confidentiality: _YES _NO (I&H)

Supervisor Notified: X_YES __NO NUCLEAR SAFETY RELATED YES

Concern: SEQUOYAH - THE GENERAL CONST. SPEC. G-29C, PROCESS SPEC. O.C.1.1 IS IN CONFLICT WITH THE TVA QUALITY ASSURANCE COMMITMENTS AS STATED BY THE TVA TOPICAL REPORT, TVA-TR75-1A, IN THAT PROCESS SPEC. O.C.1.1, SECTION 6.0 ALLOWS UNCERTIFIED WELDER FOREMEN, WHO HAVE DIRECT RESPONSIBILITY FOR THE INSTALLATION, TO PERFORM PRE-WELD INSPECTIONS. NUCLEAR POWER CONCERN. CI HAS NO FURTHER INFORMATION.

SQN/Sp-1 G.29C

DEC 11 1995

MANAGER, ERT DATE

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

ERT ___

NSRS/ERT _____

NSRS ___✓___ RCS

OTHERS (SPECIFY) _____

Welding Inspector

NSRS 12/17/85 DATE

WCDPW   D05

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS   TRANSMITTAL NUMBER T50217

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

Priority: 1   Concern # SGM-5-001-002
I-85-745-SQN

Category: 53   Confidentiality: _YES __NO (I&H)

Supervisor Notified: X_YES __NO   NUCLEAR SAFETY RELATED YES

Concern: SET DVGH - UNCERTIFIED WELDER FOREMEN ARE REQUIRED BY TVA TO PERFORM PREWELD INSPECTIONS ON INSTALLATIONS THEY ARE DIRECTLY RESPONSIBLE FOR WHICH IS A VIOLATION OF ANSI REQUIREMENTS. NUCLEAR POWER CONCERN. CI HAS NO FURTHER INFORMATION.

[illegible]

William [signature] DEC 09 1985
MANAGER, ERT   DATE

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

ERT ___

NSRS/ERT _____

NSRS __✓__ RCS

OTHERS (SPECIFY) ________________________________

welding Inspection

[signature] 12/12/85
NSRS   DATE

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-85-069-X13

I-85-

Category: 88 Confidentiality: ___Yes ___No(I&H)

Supervisor Notified: ___Yes__X__No Nuclear Safety Related YES___

Concern: CHATTANOOGA: EMPLOYEES' OJT (ON THE JOB TRAINING) RECORDS HAVE BEEN FALSIFIED. (DETAILS TO THE SPECIFIC CASE ARE KNOWN TO QTC AND WITHHELD TO MAINTAIN CONFIDENTIALITY). NUCLEAR POWER CONCERN. CI HAS NO FURTHER INFORMATION.

SIC Record falsification

O K Thero 12/13/85
Manager, ERT date

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

ERT ✓ RBB

NSRS/ERT _____

NSRS ✓ RCS

OTHERS (SPECIFY) OGC

Document control

Bruce J. Snyder 12/17/85
NSRS date

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

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : H. S. Sanger, General Counsel, E11B33 C-K

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

DATE : DEC 23 1985

SUBJECT: REQUEST FOR INVESTIGATION/EVALUATION

Reference: NSRS Procedure 0308, "Employee Response Team Program Administration"

The following employee concern is hereby transmitted to you for investigation or evaluation in accordance with the provisions of the referenced Employee Response Team Program. If you have any questions, please contact O. L. Thero at telephone 128-615-365-4414.

QTC Concern Number XX-85-069-X13

Subject SQN/RECORD FALSIFICATION

Status/Completion Due Date January 20, 1986

Attachments (list) Employee Concern Assignment Requests

Total Pages Transmitted 2

R. C. Sauer
Director/Designee - NSRS

Attachments
cc (Attachments):
NSRS File
QTC/ERT, Watts Bar Nuclear Plant

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

From: _____

I hereby acknowledge receipt of concern number XX-85-069-X13 and associated documents. Total number of pages received _____.

_____ _____
Signature Date

(Please copy entire page for return)

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-85-069-X13

I-85-

Category: 88 Confidentiality: ___Yes____No(I&H)

Supervisor Notified: ____Yes__X__No Nuclear Safety Related_YES___

Concern: CHATTANOOGA: EMPLOYEES' OJT (ON THE JOB TRAINING) RECORDS HAVE BEEN FALSIFIED. (DETAILS TO THE SPECIFIC CASE ARE KNOWN TO QTC AND WITHHELD TO MAINTAIN CONFIDENTIALITY). NUCLEAR POWER CONCERN. CI HAS NO FURTHER INFORMATION.

12/13/85

Manager, ERT date

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

ERT ✓ BBB

NSRS/ERT_____

NSRS ✓ RCS

OTHERS (SPECIFY) OGC

Document control

NSRS 12/17/85 date

QUALITY
TECHNOLOGY
COMPANY

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

November 27, 1985
ERT:OTC85.1410

Mr. Bruce Siefken
Nuclear Safety Review Staff
Knoxville, Tennessee
E3B37C-K

Dear Mr. Siefken:

SUBJECT: ERT CONCERN NUMBER XX-85-069-X05

Please acknowledge receipt of the above referenced concern. It has been changed to correct (add) location of concern. It has been transferred to concern X13.

Sincerely,

QUALITY TECHNOLOGY COMPANY

W. S. Schum, Program Manager
EMPLOYEE RESPONSE TEAM

WSS/jlr
Enclosure (1)

cc: Bob Sauer

12/23/85--JTH
cc: H. S. Sanger, E11B33 C-K

SEP 20 1985

EMPLOYEE CONCERN ASSIGNMENT REQUEST

TO: Director - NSRS

TRANSMITTAL NUMBER T50140

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

Priority: 1

Concern # XX-85-069-X05

Category: 88

Confidentiality: _YES _NO (I&H)

Supervisor Notified: ___YES _X__NO

NUCLEAR SAFETY RELATED YES___

Concern: Employees' OJT (on-the-job training) records have been falsified. (Details to the specific case are known to QTC and withheld to maintain confidentiality). CI has more information. Nuclear Power.

Changed to correct (add) location of concern. Concern transferred to concern ~~015~~ X13 CDaly 11-26-85

CCHill 11-26-85

11/29/85

SEP 10 1985

MANAGER, ERT DATE

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

ERT __/__

NSRS/ERT _____

NSRS ______

OTHERS (SPECIFY) OGC

9/16/85

NSRS DATE

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

5.0 OPERATIONS REPORT

VOLUME 2
TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

5.0 OPERATIONS REPORT

TABLE OF CONTENTS

1.0 INTRODUCTION

2.0 WELDING PROGRAM ASSESSMENT

3.0 ANALYSIS OF PROGRAMMATIC INDICATORS

ATTACHMENTS

FIGURES

APPENDIX A - WELDING REQUIREMENTS

--IMPLEMENTATION MATRICES
--PROCUREMENT DOCUMENT CONTROL
--INSTRUCTIONS, PROCEDURES, AND DRAWINGS
--DOCUMENT CONTROL
--CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES
--IDENTIFICATION AND CONTROL OF MATERIAL, EQUIPMENT, AND SERVICES
--CONTROL OF SPECIAL PROCESSES
--INSPECTION
--HANDLING, STORAGE, AND SHIPPING
--QUALITY ASSURANCE RECORDS
--MAINTENANCE AND MODIFICATIONS
--ASME SECTION XI REPAIRS, IWA-4000
--ASME SECTION XI REPLACEMENTS, IWA-7000
--ASME SECTION XI IN-SERIVCE INSPECTION (ISI) PROGRAM
--ASME CODE SECTION IX
--AWS STRUCTURAL WELDING CODE - STEEL
--REGULATORY GUIDE 1.31, "CONTROL OF FERRITE CONTENT IN STAINLESS STEEL WELD METAL"
--REGULATORY GUIDE 1.44, "CONTROL OF THE USE OF SENSITIZED STAINLESS STEEL

WELDING PROJECT - NUCLEAR OPERATIONS (NO)
PHASE I ACTIVITIES - SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

1.0 Introduction

1.1 Purpose

The primary purpose of Phase I is to determine (a) whether the SQN welding program, as it exists today, addresses TVA licensing commitments; and (b) through a review of welding-related Quality Indicators, identify trends and evaluate these trends for possible programmatic enhancements.

1.2 Scope

This work is limited to welding-related activities performed by NO since SQN became operational.

1.3 Method

The method for accomplishing this work is outlined as follows.

1.3.1 Welding Program Assessment

Section 2.0 of this report identifies the source documents to which SQN is committed with regard to welding-related activities. Programmatic and technical requirements pertaining to welding are identified on Welding Requirements Implementation Matrices (Appendix A). Corporate level and site implementing procedures which address these commitment requirements are identified on the Matrices. Each corporate and site implementing procedure is reviewed to determine whether or not it adequately addresses the commitment requirement. A written assessment which documents each review is contained in each matrix package. Recommendations are made in areas where programmatic enhancements are warranted. Procedural deficiencies are identified and corrective actions are initiated.

1.3.2 Analysis of Programmatic Indicators

Section 3.0 of this report identifies and evaluates all known welding program Quality Indicators that have been generated by NO since SQN became operational. These indicators include Corrective Action Reports (CARs), Discrepancy Reports (DRs), TVA audit reports and surveillance surveys, audit reports prepared by organizations outside TVA, and SQN-specific employee concerns. These Quality Indicators are encoded into three categories and prominent trends are identified and evaluated to identify programmatic deficiencies and/or areas for programmatic enhancement. Recommendations for program enhancement are made at the end of Section 3.0.

1.3.3 Conclusions and Assessment

The recommendations made in sections 2.0 and 3.0 are assessed for any impact on safe operation of the plant.

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01/27/86
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2.0 Welding Program Assessment

2.1 Background

Nuclear Operations (NO) is committed to welding requirements through an assortment of source documents all of which emanate from the Code of Federal Regulations. The Welding Requirements Commitment Summary (Figure 1) lists these documents, some of which invoke programmatic requirements while others invoke technical requirements. All of these requirements, programmatic and technical, are applicable to safety-related items and activities.

Programmatic requirements are implemented through the Nuclear Quality Assurance Manual and its supporting procedures and instructions as described in Chapter 17.2 of the TVA Topical Report (TVA-TR75-1A). Technical requirements, found in various codes and regulatory guides, are implemented through site work instructions which are controlled by procedures and instructions implementing programmatic requirements.

When a plant item is repaired, replaced, or modified by welding, an established program of written procedures and instructions is used to ensure conformance to applicable programmatic and technical requirements.

This section of the report identifies the source documents to which Sequoyah Nuclear Plant (SQN) is committed pertaining to NO welding-related activities. Matrices are used to correlate source document welding requirements (programmatic and technical) to the applicable implementing procedures and instructions (Appendix A). Where source document requirements are generic (i.e., the requirements apply to more than welding-related activities), applicability to the welding program is specified in the matrix package.

Applicable procedures and instructions were reviewed to ensure conformance to source document requirements. Procedural deficiencies and areas for improvement are summarized in applicable matrix packages. A procedural deficiency is a failure of the procedure to embody source document requirements. An area for improvement is an area where the procedure is weak, unclear, or unnecessarily cumbersome, but no deficiency exists. Recommended corrective action is included for both deficiencies and areas for improvement.

2.2 Programmatic Requirements

Refer to attached Welding Requirements Implementation Matrices (Appendix A) for an assessment of procedural implementation of the following programmatic requirement areas.

--Procurement Document Control

--Instructions, Procedures, and Drawings

--Document Control

--Control of Purchased Material, Equipment, and Services

--Identification and Control of Material, Parts, and Components

--Control of Special Processes

--Inspection

--Handling, Storage, and Shipping

--Quality Assurance Records

--Maintenance and Modifications

2.3 Technical Requirements

Refer to attached Welding Requirements Implementation Matrices (Appendix A) for an assessment of procedural implementation of the following technical requirement areas.

--ASME Section XI Repairs, IWA-4000

--ASME Section XI Replacements, IWA-7000

--ASME Section XI Pressure Tests

--ASME Section XI In-Service Inspection (ISI) Program

--ASME Code Section IX

--AWS Structural Welding Code - Steel

--Regulatory Guide 1.31, "Control of Ferrite Content in Stainless Steel Weld Metal"

--Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel"

2.4 Conclusions and Recommendations

A total of eighteen (18) requirement areas were assessed to ensure conformance of the written welding program to source document requirements. Ten (10) of the areas contain programmatic requirements, and eight (8) contain technical requirements. Matrices were not prepared for IE Bulletins or Licensing Letters as no welding-related requirements were found in either IE Bulletin files or Licensing correspondence.

2.4.1 Programmatic Requirements

2.4.1.1 Programmatic requirements were generally found to be addressed in procedures and instructions. However, three (3) procedural deficiencies were identified and will be tracked through established central office and site corrective action programs until closure. Each of the following deficiencies is being corrected by procedure revision.

a) NQAM, Part II, Section 6.1 does not address checks of contractor welder qualifications prior to work on site. SQN instructions have the same deficiency as above. This is not an implementation deficiency based on discussions with the Plant QA Staff that indicate contractor welder qualifications are reviewed before welding. (See matrix "Control of Special Processes") (Recorded on Discrepancy Report)

b) DPM N73M2 does not require that preweld inspections of structural items, when called for on engineering drawings or work package instructions, be performed by certified inspectors. (See matrix "Control of Special Processes") (Recorded on Corrective Action Report)

c) SQN M&AI-11 does not establish responsibility for preweld inspections of structural items. (See matrix "Control of Special Processes") (Recorded on Discrepancy Report)

Procedural deficiency (a) does not directly affect weld quality and therefore has no impact on start-up and operation of the plant. Procedural deficiencies (b) & (c) concerning preweld inspection of structural welding have raised questions about structural welding requirements and how they are implemented at the plant. During discussions with plant personnel, it was stated that in actual practice qualified QC inspectors perform preweld inspection in accordance with Program Procedure 1502.07 (formerly DPM N80E3), NDE Procedure N-VT-2, when inspection is required either by engineering drawings or work package instructions. (Procedure N-VT-2 complies with the TVA commitment to Regulatory Guide 1.58, R.1, as described in the TVA Topical Report.)

However, fitup inspections are rarely, if ever, delineated on structural design drawings. Also, some confusion exists as to whether or not specifying fitup inspections is the designer's responsibility or the user organization's responsibility.

In addition, it was determined that SQN has never adopted Process Specification O.C.1.1 of G29-C since becoming operational. Specifically, this Process Specification requires that preweld inspections (i.e., fitup, material verification, etc.) be performed by the welder foreman. These activities are not required to be documented, but are subject to a rigorous QA surveillance program. The welding program utilized by SQN does not require these preweld inspections to be performed by anyone (unless specifically required on the engineering drawing) but relies on the skill and discretion of qualified craft personnel. SQN does perform routine welding surveillance that primarily focuses on piping and components. This program may or may not assure adequate quality depending on the nature and complexity of structural welding that has been performed since SQN became operational. Because of these issues, a detailed engineering evaluation involving OE and NO is being conducted to determine if a deficiency in the structural welding program exists and what corrective actions and/or programmatic improvements are required. The results of this evaluation and corrective action will be presented in the Welding Project Phase II report for SQN.

2.4.1.2 Nine (9) areas for improvement of procedures were identified, none of which are considered to be conditions adverse to quality. These items are being forwarded as recommendations for procedure enhancement to responsible organizations for coordination and revision of the appropriate procedures. Details on these nine items are included in the following matrix packages.

Identification and Control of Material, Parts, and Components (2 items)

Control of Special Processes (3 items)

Inspection (1 item)

Quality Assurance Records (2 items)

Maintenance and Modifications (1 item)

2.4.2 Technical Requirements

2.4.2.1 Technical requirements for AWS D1.1; ASME Section IX; and ASME Section XI, IWA-4000 and IWA-7000 were considered to be adequately addressed by procedures and instructions. However, two (2) areas for improvement were identified which require revisions to SQN MI 6.21, "Repairs and Replacements to ASME Section XI Components;" and AI-19 (Part IV), "Modifications After Licensing." These are further discussed in implementation matrix packages on ASME Section XI Repairs and ASME Section XI Replacements. These areas for improvement do not reflect any breakdowns in the QA program that could potentially result in a condition adverse to quality. These recommendations will be forwarded to the appropriate plant sections and to the NUC SVCS Welding and Metallurgy Section for coordination and revision of the above procedures.

2.4.2.2 Technical requirements for ASME Section XI in-service inspection and pressure test following the repair and replacement of components which require welding on the pressure retaining boundary of the component were considered to be adequately implemented in procedures and instructions. However, five (5) areas for improvement were identified. These are addressed in detail in implementation matrix packages on ASME Section XI In-service Inspection and ASME Section XI Pressure Tests. These areas for improvement represent procedure clarification and are not indicative of a potential condition adverse to quality.

These recommendations will be forwarded to the appropriate plant sections and to NUC SVCS, ISI Programs Section for coordination and revision of the appropriate procedures.

2.4.2.3 The technical requirements of Regulatory Guides 1.31, "Control of Ferrite Content In Stainless Steel Weld Metal," and 1.44, "Control of Use of Sensitized Stainless Steel," were considered to be adequately addressed by procedures and instructions.

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3.0 Analysis of Programmatic Indicators

3.1 Background

As part of the Welding Project (WP) Charter, the Office of Construction (OC) has initiated an analysis of data extracted from OC and Nuclear Operations (NO) to determine overall welding program weaknesses. This database is made up of in-process and overview type documents collected from OC and NO, with the great bulk of them being OC-generated in-process documents. These documents or "Programmatic Indicators" best define the condition of the agency's overall welding program. These programmatic indicators are encoded into one of the categories shown in Figure 2 so that meaningful trends can be identified and evaluated for any possible programmatic enhancements. Employee Concerns are also included in this study to obtain additional data for overview and analysis purposes. The data analysis of this report only addresses programmatic indicators for NO with regard to Sequoyah Nuclear Plant (SQN).

3.2 SQN NO Analysis

3.2.1 The documentation for SQN NO that was analyzed included Corrective Action Reports (CARs), Discrepancy Reports (DRs), site surveillance reports, TVA audit reports, audit reports from organizations external to TVA, and Sequoyah-specific employee concerns that were available when the data was analyzed. A detailed evaluation and disposition of the welding-related SQN employee concerns (both specific and generic) is addressed in Section VI of the Sequoyah Nuclear Plant, Office of Construction - Welding Project Final Report. As shown in Figure 2, the vast majority of programmatic indicators fall into the following two areas: Implementation of Program (74%) and Procedural Adequacy and Documentation (19%). These two categories are discussed below.

3.2.1.1 Implementation of Program

Figure 3 reveals that 75% of this category was classified as "failure to follow procedure." This indicates that procedures may be inadequate or that personnel are not properly trained.

Seventeen percent (17%) of this category is in the "welder qualification" area. This indicates that there may be a lack of understanding in both the engineering and crafts of the correct application of welder qualification principles.

A review of all active welder's files was performed by QA surveillance personnel and weld-test representatives to identify and correct discrepancies related to welder continuity and welder qualification in October 1985. The

resultant report (CAR No. SQ-CAR-85-09-014, Corrective Action Report) has been reviewed and proposed corrective action concurred with by the welding project.

3.2.1.2 Procedural Adequacy and Documentation

The breakdown of program indicators in this category (Figure 4) indicates that while there is a program in place, there are procedural and documentation weaknesses. Added training appears to be needed in this area.

3.2.1.3 Materials and Hardware

Only seven percent (7%) of the programmatic indicators fall into the category of materials and hardware. This is not a sufficient amount to detect any observable trends.

3.3 Conclusions Applicable to the NO Analysis

The total amount of data available for NO analysis consists of only 57 items compared to 862 items which were analyzed for the construction era at SQN. A more thorough analysis of the NO data was performed because it is representative of the present program at SQN and the preliminary analysis indicates that it is typical of the construction data. The following conclusions are based on both analyses.

3.3.1 From a total of 759 program indicators (primarily CARs DRs) only 57 (7.5 percent) were welding related. This is not an insignificant quantity but indicates, along with site QA surveillance and weld quality checks which the Nuclear Safety Review Staff has performed, that the program has produced a majority of welds in accordance with code and other program requirements. The essential elements of an acceptable welding program exist but need improvement in their implementation (see Recommendation section).

3.3.2 Sporadic noncompliance to program requirements is evident and is attributable to lack of adequate training at all personnel levels. The program seems to rely on the experience and knowledge of senior personnel on the job and their ability to relay this information to new personnel. Attachment I lists several CARs and DRs which illustrate this.

3.3.3 Weld information, data accumulation, and welder qualification/continuity are maintained by manual systems which are slow to access and cumbersome to use.

3.3.4 "Corrective Action" statements on numerous CARs and DRs do not record an assessment of hardware adequacy although they were satisfactorily closed out. As written, they can mistakenly lead one to believe nonconforming conditions exist and they could impact the hardware. Attachment II lists several CARs and DRs which illustrate this.

3.3.5 "Actions Taken to Prevent Recurrence" statements on numerous CARs (before 1984) include statements such as "Welder foreman was advised of the importance of following procedure." Unless verbal instructions are documented in writing, it is impossible to know what the employee was told or whether ne understood the verbal instructions. Attachment III lists several CARs and DRs which illustrate this. This problem seems to have been resolved in that more recent CARs (1984 to present) include either documented training or instruction letters in "Actions Taken to Prevent Recurrence" sections.

3.4 Recommendations

A significant number of program indicators exist in the area of welding to warrant implementation of the following recommendations.

3.4.1 Establish a formal training program which emphasizes maintaining welder qualification records, preparation of work instructions, selection of proper welding and non-destructive examination procedures, and preparation of NOI forms. It is recommended that this training be given to appropriate engineering, craft, and QA personnel at least once a year or at the beginning of each major refuel outage.

3.4.2 Preparation of CARs/DRs - "Corrective Action" statements should assess service suitability of hardware when the nonconforming condition potentially affects the hardware. "Actions Taken to Prevent Recurrence" statements should require documented training or corrective instructions where this action is warranted.

3.4.3 Recordkeeping - Welder qualifications/continuity and weld data sheets should be computerized to provide quicker and more complete access to data.

In summary, the analysis of programmatic indicators reveals the need for improvement in training of all personnel performing welding related activities, and improvement in disposition of welding related CARs and DRs although an improvement trend was noted. The recommendations in this report reflect the need for programmatic improvements in the welding program. They do not, however, reflect any breakdowns in the QA program that could potentially result in a condition adverse to quality or safety.

GJP:JLR
01/30/86
A1GJP4.JR

ATTACHMENT I

The following is a list of CARs and DRs which indicate a lack of adequate training.

DR-82-13-R - Copy of workplan and detailed weld procedure (DWP) not at work site.

DR-85-09-118R - Welding/burning permits issued without survey of work area.

CAR-83-09-032/DR-83-09-082R - Weld rods not controlled in accordance with M&AI-5; 13 specific violations.

DN-82-5a-54 - Welding completed without proper documentation attached to MR.

CAR-83-09-030 - Weld repair performed without approved work instructions and documentation.

DR-84-09-108R - Quality control inspector signed data sheet; welder had not maintained continuity.

CAR-85-08-012 - Uncertified inspector inspected welds.

GJP:JLR
01/28/86
A1GJP4.JR

ATTACHMENT II

The following is a list of CARs and DRs which, unless otherwise specified, should have had a statement of weld (hardware) evaluation but did not.

DR-83-08-067R - Weld rod issue cards indicate non-qualified welders are welding plant equipment.

CAR-83-09-032/DR-83-09-082R - Weld rods not controlled in accordance with M&A[illegible] (13 violations).

CAR-83-09-030 - Weld repair performed without approved work instructions.

DR-85-08-097R - Quality control (QC) inspector did not determine that weld material did not comply with DWP.

DR-84-09-108R - QC inspector signed data sheet; welder had not maintained continuity.

CAR-83-08-027 - Eleven stated filler material control violations.

DR-84-09-113R - Unapproved aluminum weld filler used on non-CSSC equipment.

DR-83-09-080R - Welding surveys not performed as required on evening and midnight shifts.

DR-84-01-005R - Welding machine preventive maintenance not documented as required.

GJP:JLR
01/28/86
A1GJP4.JR

ATTACHMENT III

The following is a list of CARs and DRs which illustrate the weakness in corrective retraining.

DR-85-05-051R - "general warning"

CAR-83-01-001 - "memorandum sent to general formen, foremen and welders" - but not attached to CAR

DR-82-13-R - "Cognizant Engineer, foremen reminded"

DR-85-08-112R - Cognizant Engineer - no record of instruction

CAR-83-09-030 - "Engineer, foremen advised to become more involved"

DR-85-08-097R - "QC inspector instructed . . ."

DR-84-06-065R - "Reviewers instructed" 4a-84-A-015

CAR-83-08-027 - "Retrained"

GJP:JLR
01/28/86
A1GJP4.JR

NUCLEAR OPERATIONS COMMITMENT SUMMARY
--- WELDING ---

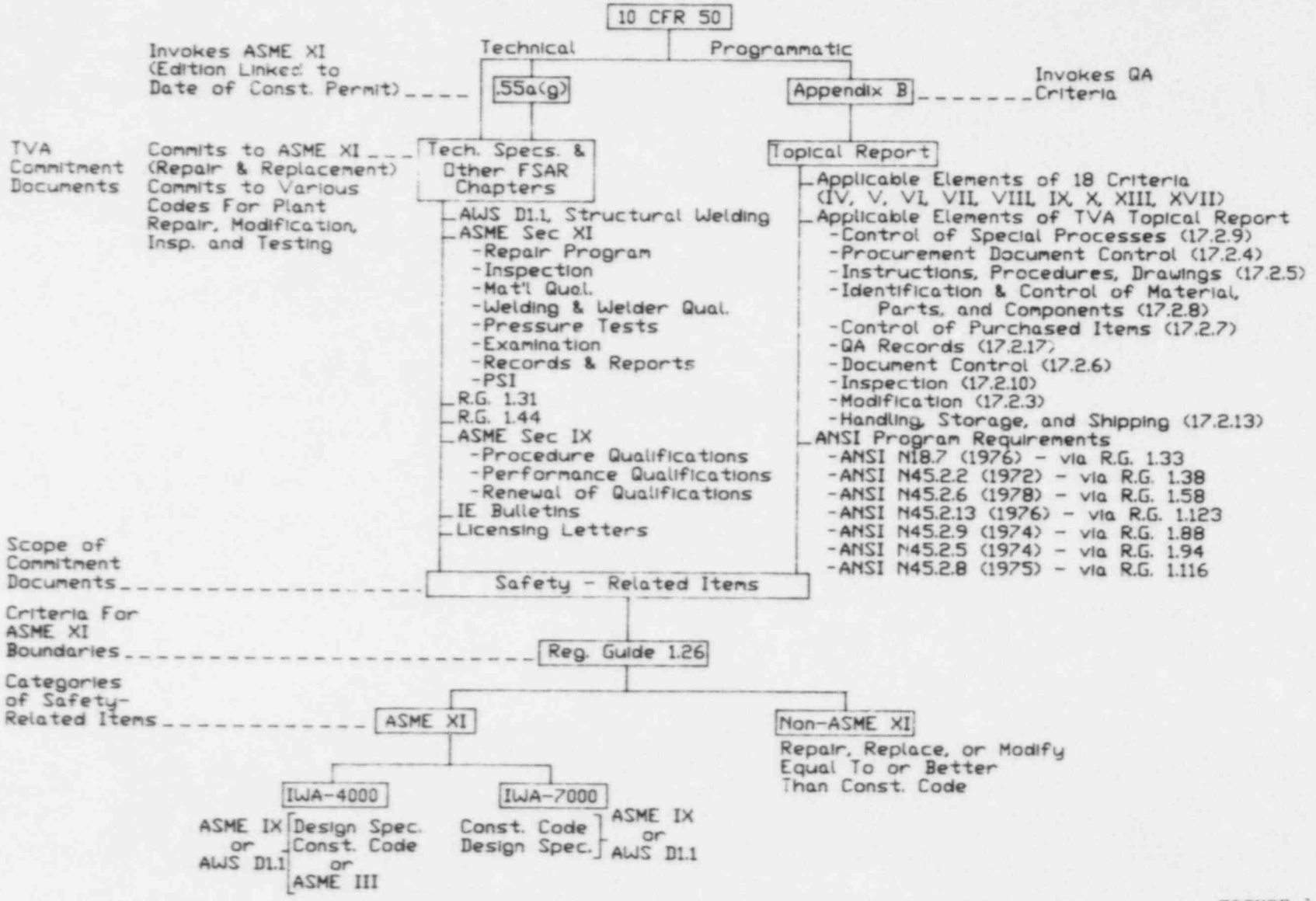


FIGURE 1

SQN - NUCLEAR OPERATIONS
ALL PROGRAMATIC INDICATORS BY HARDWARE, PROCEDURES & PROGRAM IMPLEMENTATION.

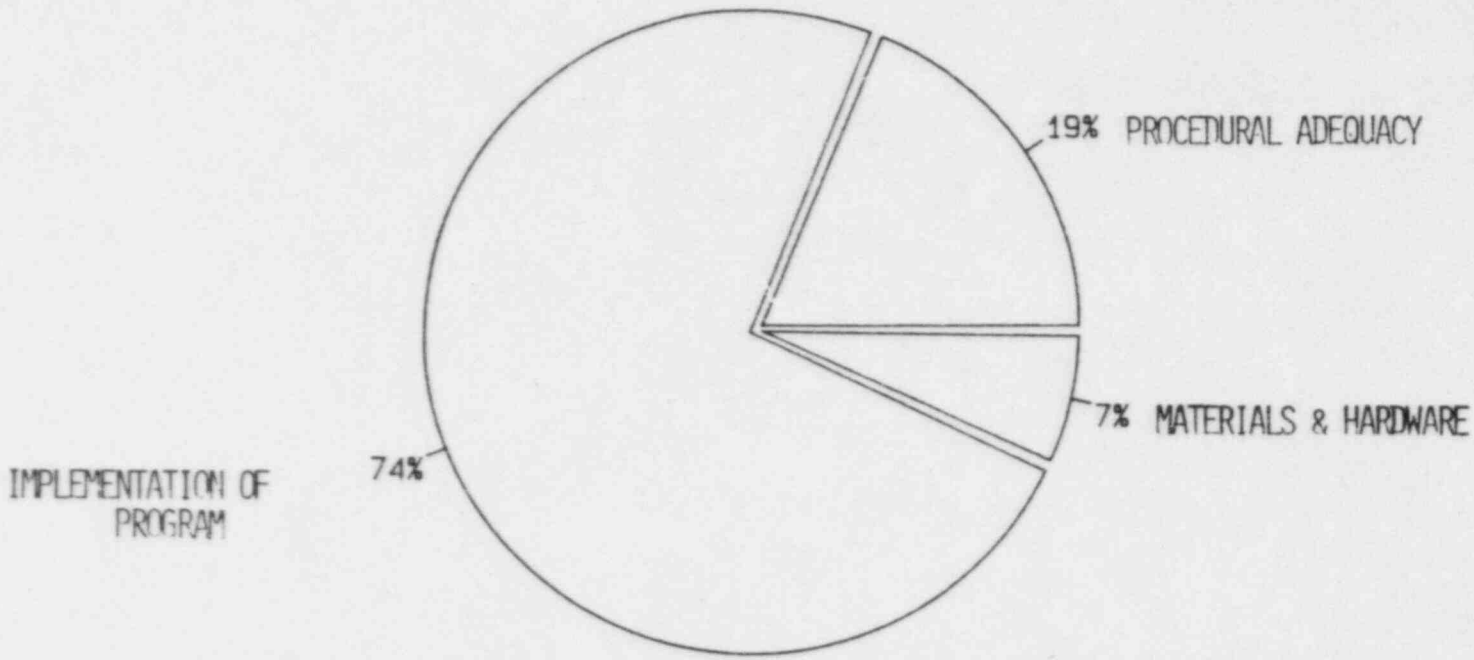
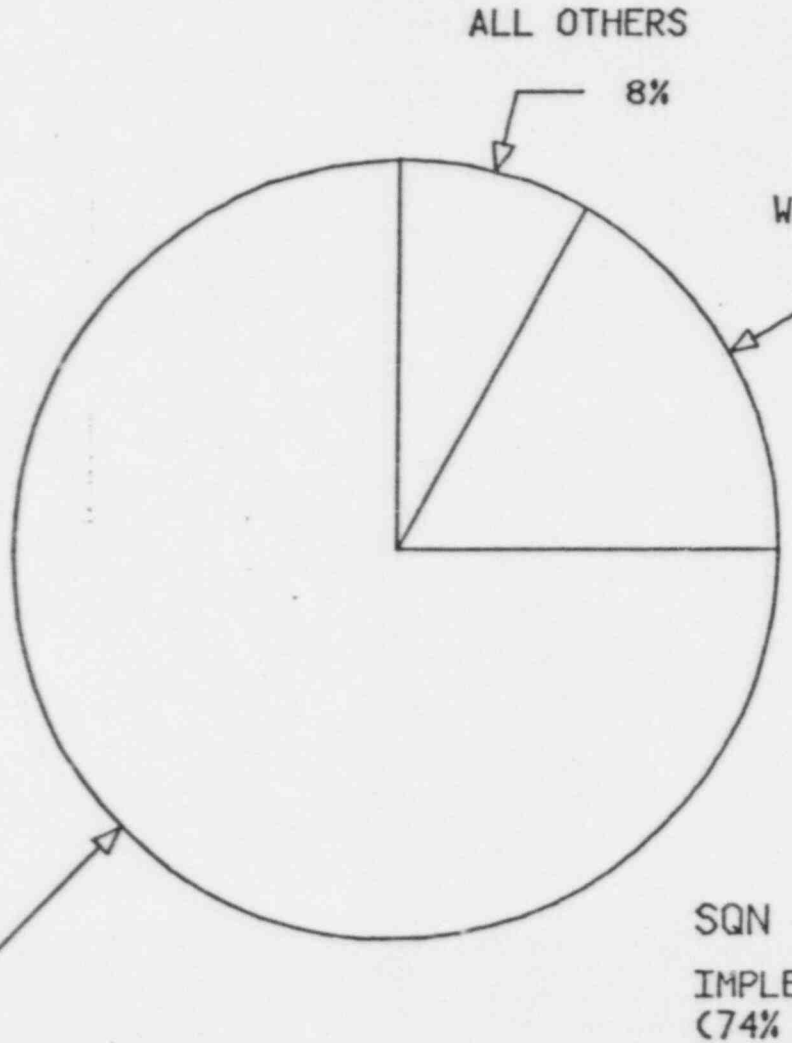


FIGURE 2

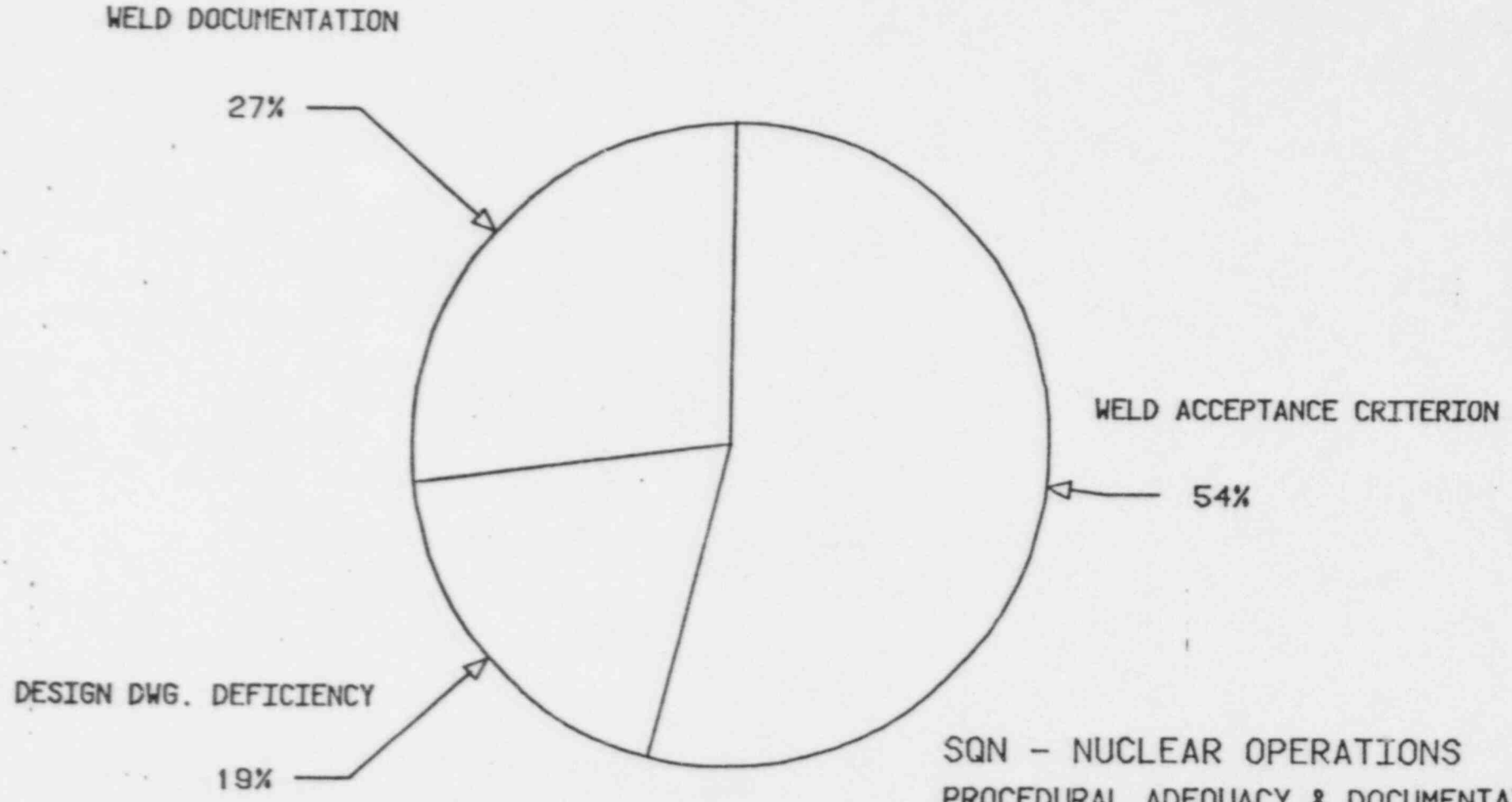


SQN - NUCLEAR OPERATIONS

IMPLEMENTATION OF PROGRAM
(74% OF PROGRAM ANALYSIS)

(12/31/85 RUN)

FIGURE 3



SQN - NUCLEAR OPERATIONS

PROCEDURAL ADEQUACY & DOCUMENTATION
(19% OF PROGRAM ANALYSIS)

(12/31/85 RUN)

FIGURE 4

APPENDIX A

Welding Requirements Implementation Matrices

Welding Requirements Implementation Matrix

Requirement Area: Procurement Document Control

Prepared By: D. F. Jaquith

Date: December 21, 1985

Requirement Area: Procurement Document Control

Applicability to the welding program:

Preparation and control of procurement documents for welding materials and contractors performing welding services.

Assessment Summary:

The requirements for the procurement of welding material and services are considered to be adequately implemented by procedures and instructions.

DFJ:KC
1/2/86
0085K

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B			
IV. PROCUREMENT DOCUMENT CONTROL Measures shall be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services, whether purchased by the applicant or by its contractors or subcontractors. To the extent necessary, procurement documents shall require contractors or subcontractors to provide a quality assurance program consistent with the pertinent provisions of this Appendix.	III, 2.1 (Procurement of Materials, Components, Spare Parts, and Services - 12-23-85)	DPM N76A10, Appendix 1 and 3 (Purchase Specifications for CSSC Metallic Materials . . Welding and Brazing Materials - 1-4-85)	SQA45 (R18) (Quality Control of Material and Parts and Services) SQA162 (R1) (Purchase Specifications)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.4 Procurement Document Control Procurement document control applies to documents used to obtain materials, parts, components, and services required to modify, maintain, repair, test, inspect, or operate nuclear generating facilities. The quality of purchased replacement materials, components, and spare parts are equal to or better than the original item. Control of procurements is accomplished primarily through procurement documents. The originating organization is responsible for including or referencing regulations, codes, standards, design bases, or other provisions necessary to assure adequate quality assurance requirements in the documents for procurement of materials, parts, components, and services. Procurement documents include the following as applicable: 1. Basic technical requirements, including drawings, test and specification requirements, special instructions, applicable regulations, codes, and industrial standards. 2. Requirements for supplier surveillance and inspection, including provisions for TVA's access to its plant and records. 3. Requirements that the supplier provide a description of his quality assurance program which meets applicable requirements of 10 CFR 50, Appendix B. 4. Documentation requirements, including records to be prepared, maintained, submitted, or made available for review, such as drawings, specifications, procedures, procurement documents, inspection and test records, qualifications, chemical and physical test results, and instructions for ultimate disposition of the records. TVA utilizes recognized standards for the purchase of standardized items such as bearings, V-belts, capacitors, resistors, transistors, lubricating oils. Other items are purchased by part number or recommendations supplied by the original manufacturer or supplier. Items which are covered by industry codes or standards (e.g., welding rod, pressure boundary materials, etc.) are purchased in accordance with the applicable codes and standards.	III, 2.1 (Procurement of Materials, Components, Spare Parts, and Services - 12-23-85)	DPM N76A10, Appendix 1 and 3 (Purchase Specifications for CSSC Metallic Materials . . . Welding and Brazing Materials - 1-4-85)	SQA45 (R18) (Quality Control of Material and Parts and Services) SQA162 (R1) (Purchase Specifications)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Regulatory Guide 1.123, (Revision 1), July 1977 - 'Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants' (Endorses N45.2.13-1976) **C. REGULATORY POSITION** The requirements that are included in ANSI N45.2.13-1976 for control of procurement of items and services for nuclear power plants are acceptable to the NRC staff and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR Part 50, subject to the following: 2. Section 1.1 of ANSI N45.2.13-1976 states: "The ASME Boiler & Pressure Vessel Code (hereafter referred to as the Code) as well as other ANSI standards, has been considered in the development of this standard, and this standard is intended to be compatible with Code requirements. This standard does not, however, apply to activities covered by Section III, Division 1 and 2, and Section XI of the Code for those activities covered by the Code." While Section III, Divisions 1 and 2, and Section XI (which addresses the control of spare and replacement parts) of the ASME Boiler and Pressure Vessel Code address general requirements for control of procurement of items and services for nuclear power plants, these sections do not explicitly address all the activities described in the ANSI N45.2.13-1976 standard. ANSI N45.2.13-1976, subject to the exceptions of the regulatory position, should be used in conjunction with the ASME Boiler and Pressure Vessel Code, Section III, Divisions 1 and 2, and Section XI for control of procurement of items and services where the ASME Code does not address the activities covered by ANSI N45.2.13-1976.	III, 2.1 (Procurement of Materials, Components, Spare Parts, and Services - 12-23-85)		SQA45 (R18) (Quality Control of Material and Parts and Services)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.13-1976 **1. INTRODUCTION** **1.1 Scope** This standard describes requirements and provides guidelines for the control of activities to be exercised during procurement of items and services which affect the quality of nuclear power plants. These requirements and guidelines apply to procurement activities for items and services such as designing, purchasing, fabricating, handling, shipping, storing, cleaning, constructing, erecting, installing, inspecting, testing, maintaining, repairing, initial fueling, refueling, and modifying. • • •	III, 2.1 (Procurement of Materials, Components, Spare Parts, and Services - 12-23-85)		SQA45 (R18) (Quality Control of Material and Parts and Services)

Welding Requirements Implementation Matrix

Requirement Area: Instructions, Procedures, and Drawings

Prepared By: D. F. Jaquith

Date: December 24, 1985

Requirement Area: Instructions, Procedures, and Drawings

Applicability to the welding program:

Welding, heat treatment, and NDE procedures; implementing instructions which require welding, heat treatment, and NDE; and design drawings which specify welding, heat treatment, and NDE.

Assessment Summary:

The requirements for instructions, procedures, and drawings as applied to the welding program are considered to be adequately implemented by procedures and instructions.

DFJ:KC
1/2/86
0086K

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-24-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **V. INSTRUCTIONS, PROCEDURES, AND DRAWINGS** Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.	III, 1.1 (Document Control - 3-21-85) II, 6.1 (Welding -10-12-84) II, 6.2 (Heat Treatment - 10-12-84) II, 6.3 (NDE Procedures - 3-26-85) II, 2.1 (Plant Maintenance - 4-18-85) II, 2.3 (Repair and Replacements of ASME XI Components - (4-3-85)	DPM N73M2 (Process Specifications for Welding and Heat Treatment - 12-20-85) PMP 1502.07 (NDE Procedures - 1-18-85) (Formerly DPM N80E3) PMP 1402.02 (SQN) - (Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components - 3-20-85)	SQA1 (R10) (System of Standard Practices) AI-4 (R50) (Document Control) SQM17 (R2) (Welding Requirements) M&AI-1 (R9) (Welding Documentation and Heat Treatment) AI-19, Part IV (R12) (Plant Modifications) TI-51 (R29) (NDE Procedures) SQM1&2 (Maintenance Program) AI-25, Part 1 (R11) (Drawing Control) MI-6.21 (R9) (Repair and Replacements of ASME Section XI Components)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-24-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.5 Instructions, Procedures, and Drawings Instructions, procedures, and drawings for internal use by the Office of Nuclear Power are developed to prescribe those activities that affect the safety-related functions of the CSSC. Compliance with these documents is mandatory. (Requirements for suppliers and contractors to develop and implement procedures, instructions, and drawings to meet the pertinent requirements of 10 CFR 50, Appendix B, are included under subsection 17.2.4, 'Procurement Document Control.') Procedures are written to provide a controlled method within the Office of Nuclear Power for preparing, reviewing, changing, and approving procedures and instructions. Procedures and instructions prescribing operational activities that affect the safety-related functions of the CSSC identify any special equipment and environmental conditions required to perform the activity, provide applicable quantitative and qualitative acceptance criteria and include provisions for documenting that activities were accomplished in accordance with these instructions. NUC PR provides written procedures, instructions, and drawings as required for the administration, operation, maintenance, and modification of nuclear plants. Approval, issuance, and control of plant-level instructions and drawings and changes thereto are the responsibility of the Plant Manager. • • •	III, 1.1 (Document Control - 3-21-85) II, 6.1 (Welding -10-12-84) II, 6.2 (Heat Treatment - 10-12-84) II, 6.3 (NDE Procedures - 3-26-85) II, 2.1 (Plant Maintenance - 4-18-85) II, 2.3 (Repair and Replacements of ASME XI Components - (4-3-85)	DPM N73M2 (Process Specifications for Heat Treatment - 12-20-85) PMP 1502.07 (NDE Procedures - 1-18-85) (formerly DPM N80E3) PMP 1402.02 (Preparation of Work Instructions for Repairs and Replacements of ASME XI Components - 3-20-85)	SQA1 (R10) (System of Standard Practices) AI-4 (R50) (Document Control) SQM17 (R2) (Welding Requirements) M&AI-1 (R9) (Welding Documentation and Heat Treatment) SQM1&2 (Maintenance Program) TI-51 (R29) (NDE Procedures) AI-19, Part IV (R12) (Plant Modifications) AI-25, Part 1 (R11) (Drawing Control)

Welding Requirements Implementation Matrix

Requirement Area: Document Control

Prepared By: D. F. Jaquith

Date: December 23, 1985

Requirement Area: Document Control

Applicability to the Welding Program:

Control of welding, heat treatment, and NDE procedures; and implementing procedures which require welding, heat treatment and NDE.

Assessment Summary:

The requirements for document control as they apply to the welding program are considered to be adequately implemented by procedures and instructions.

DFJ:KC
1/1/86
0083K

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFF 50, Appendix B **VI. DOCUMENT CONTROL** Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization.	III, 1.1 (Document Control - 3-21-85)	DPM N7312 (Welding Procedures - 12-20-85) PMP 1502.07 (NDE Procedures-1-18-85) (Formerly DPM N80E3)	SQA1 (R10) (System of Standard Practices) AI-4 (R50) (Document Control) M&AI-1 (R9) (Control of Weld Documentation) TI-51 (R29) (NDE Procedures) SQM17 (R2) (Welding Procedures) AI-19, Part IV (R12) (Plant Modifications) AI-25, Part 1, (R11) (Drawing Control)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.6 Document Control Documents and revisions which control activities affecting the CSSC are prepared, reviewed by qualified individuals, other than the preparer, and approved for issuance by authorized personnel before release or issuance in accordance with written procedures. Preparation, review, approval and issue of controlled documents is accomplished in accordance with written approved procedures. These procedures identify the organization responsible for the actions and assure that changes to these documents will be reviewed and approved by the same group. Table 17B-5 shows the major categories of controlled documents. Controls are established to provide for: an identification of documents to be controlled and the level of control required, provisions for distinguishing between controlled and uncontrolled copies of the same document, and provisions for periodic issuance of a status list of current revisions. The responsibility for document control is shared by the originating organization of the document and the receiving organization of the document. The originating organization is responsible for assuring that documents are prepared, reviewed, approved by management, and distributed under controlled conditions. The originating organization is responsible for maintaining a current distribution list for holders of controlled copies of their controlled document. The recipient of revised documents discards obsolete copies and replaces with the current revision. Changes to documents are reviewed and approved by the same organization that performed the original review and approval or by other qualified responsible organizations delegated to assure that approved changes are included in instructions, procedures, drawings, and other documents before implementing the change; and that documents will be at the location where the activity will be performed before commencing the work. The plants have implementing instructions that carry out these requirements.	III, 1.1 (Document Control - 3-21-85) II, 6.1 (Welding, 10-12-85)	DPM N73M2 (Welding Procedures - 12-20-85) PMP 1502.07 (NDE Procedures - 1-18-85) (Formerly DPM N80E3)	SQA1 (R10) (System of Standard Practices) AI-4 (R50) (Document Control) M&AI-1 (R9) (Control of Weld Documentation) TI-51 (R29) (NDE Procedures) SQM17 (R2) (Welding Procedures) AI-19, Part IV (R12) (Plant Modifications) AI-25, Part 1, (R11) (Drawing Control)

Welding Requirements Implementation Matrix

Requirement Area: Control of Purchased Material, Equipment, and Services

Prepared By: D. F. Jaquith

Date: December 23, 1985

Requirement Area: Control of Purchased Material, Equipment, and Services

Applicability to the welding program:

Procurement control of welding material, receipt inspection of weld material, and control of the selection of contractors providing welding services.

Assessment Summary:

The requirements for the procurement control of welding material, receipt inspection of welding material, and the selection of contractors providing welding services are considered to be adequately implemented by procedures and instructions.

DFJ:KC
1/2/86
0084K

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **VII. CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES** Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures shall include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor source, and examination of products upon delivery. Documentary evidence that material and equipment conform to the procurement requirements shall be available at the nuclear power plant or fuel reprocessing plant site prior to installation or use of such material and equipment. This documentary evidence shall be retained at the nuclear power plant or fuel reprocessing plant site and shall be sufficient to identify the specific requirements, such as codes, standards, or specifications, met by the purchased material and equipment. The effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services.	III, 2.1 (Procurement of Material, Components, Spare Parts, and Services - 12-23-85) III, 2.2 (Receipt Inspection, Handling, and Storage of Materials, Components, and Spare Parts - 12-23-85)		SQA45 (R18) (Quality Control of Material and Parts and Services) AI-11 (R34) (Receipt Inspection)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.7 Control of Purchased Material, Equipment, and Services 17.2.7.1 General Materials, equipment, and services, whether purchased directly or through others, conform to procurement document specifications as established in subsection 17.2.4. Provisions are made, as appropriate, for source evaluation and selection, review for objective evidence of quality, inspection at source, and examination upon delivery. Quality control measures of suppliers are assessed at periodic intervals commensurate with the importance, quantity, and complexity of the product or services being purchased. This assessment verifies that documentation such as inspection records and certificates of conformance are valid. Where significant equipment failures occur, the cause is evaluated to determine if the original equipment or the original design is appropriate for replacement or repair. Proposals (bids or quotations) by suppliers are reviewed to ensure that no exceptions are taken which would violate safety or quality requirements. • • • 17.2.7.4 Receiving Inspection Examination upon delivery is performed in accordance with general written instructions which contain measures to assure: A. The material, component, or equipment is properly identified and corresponds with the receiving documentation. B. Inspection of the material, component or equipment, and acceptance records is performed and judged acceptable in accordance with predetermined inspection instructions, before use or installation and declaring the component or system operable. C. Documentation such as inspection records or certificates of conformance attesting to the acceptability of materials, components, and equipment is available at the nuclear power plant before use or installation. In special circumstances, and with Plant Manager approval, such items may be installed before receipt of associated documentation. The item will be tagged as nonconforming and additional administrative controls will provide assurance that the affected system will not be declared operable before disposition of the nonconformance. D. Items shall not be accepted for stock or released for installation or further work until inspection is complete or inspection status identified. E. Nonconforming items are segregated where practical, controlled, and clearly identified until proper disposition is made. • • •	III, 2.1 (Procurement of Material, Components, Spare Parts, and Services - 12-23-85) III, 2.2 (Receipt Inspection, Handling, and Storage of Materials, Components, and Spare Parts - 12-23-85) (III, 2.2 applies to paragraphs 17.2.7.1 and 17.2.7.4)		SQA45 (R18) (Quality Control of Material and Parts and Services) AI-11 (R34) (Receipt Inspection)

Welding Requirements Implementation Matrix

Requirement Area: Identification and Control of Material, Parts, and Components

Prepared By: R. P. Lynskey

Date: December 21, 1985

Requirement Area: Identification and Control of Material, Parts, and Components

Applicability to the Welding Program:

Identification and control of welding material such as electrodes, fluxes, welding wire, and consumable inserts.

Assessment Summary:

With the exception of the following areas for improvement, the requirement for identification and control of welding material is considered to be adequately implemented by procedures and instructions.

Areas for improvement:

-- The NQAM does not state the intended purpose of material control as given in 10 CFR 50, Appendix B (i.e., to prevent use of incorrect or defective items). It refers to other procedures such as Part III, Section 2.1 for procurement; DPM N73M2 for identification, storage, issue and return to storage; and the weld data sheet which is used to record identification of base metal and filler metal at fitup. Instructions for use of the weld data sheet should be more encompassing in order to procedurally establish requirements to prevent use of incorrect items prior to welding.

-- DPM N73M2 includes weld data sheets in Supplement C with no reference thereto and no instructions regarding their purpose or use.

Recommended corrective action:

-- Division of Quality Assurance - Quality Systems Branch revise NQAM, Part II, Section 6.1 to state the intended purpose of 10 CFR 50, Appendix B, Criterion VIII and to require completion of weld data sheets (particularly requiring entry of base metal and filler metal identification).

-- Mechanical Branch - Revise DPM N73M2 to refer to weld data sheets in Supplement C and describe their purpose and use.

RPL:KC
1/1/86
0082K

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **VIII. IDENTIFICATION AND CONTROL OF MATERIAL, PARTS, AND COMPONENTS** Measures shall be established for the identification and control of materials, parts and components, including partially fabricated assemblies. These measures shall assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, erection, installation, and use of the item. These identification and control measures shall be designed to prevent the use of incorrect or defective material, parts, and components.	II, 6.1, para. 6.0 (Welding - 10-12-84)		M&AI-5 (R8) (Welding Material Control) AI-36 (R8) (Storage, Handling, and Shipping of QA Material) M&AI-1 (R9) (Control of Weld Documentation and Heat Treatment)
	Area for Improvement: The purpose of material control to prevent use of incorrect items is not stated. Requirements for completing weld data sheet (especially recording material identification) are not comprehensive.		
	III, 2.3 (Issuing of Materials, Components, and Spare Parts-7-29-85)	DPM N73M2 (Specification for Welding Materials Control - 1-13-83) (P.S. 1.M.3.1) Area for Improvement: Supplement C of this DPM does not refer to enclosed weld data sheets nor does it describe their purpose and use. One of their functions is to ensure use of correct material by requiring the recording of identification numbers prior to welding.	

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A), R8 17.2.8 Identification and Control of Materials, Parts, and Components The identification and control of materials, parts, and components is accomplished in accordance with written requirements and applies to materials, parts, or components in any stage of fabrication, storage, installation, or use. Materials, parts, and components identified as nonconforming are handled in accordance with subsection 17.2.15 of this plan. Identification and control requirements cover such items as traceability to associated documents (except for standardized, commercial-grade items); specification of the degree of identification and control necessary; location and method of identification to preclude a degradation of the item's functional capability or quality; and the proper identification of materials, parts, and components before release for manufacturing, shipping, construction, and installation. Materials, parts, and components manufactured or modified by TVA shall be similarly identified, documented, and controlled. DQA provides procedures for identification and control of items of CSSC received, stored, installed, used at the plant site, permanently transferred to or purchased by the Office of Nuclear Power, or transferred between operating plants. The Plant Manager provides instructions for identification and control of materials, parts, or components received, stored, installed, modified, and used at the plant site. The Plant QA Staff ensures that proper documentation accompanies safety-related materials, parts, and components by surveillance of receipt activities and documentation maintained by the Power Stores Unit. In the event traceability is lost for a specific item, it will be handled as nonconforming material and treated in accordance with subsection 17.2.15.	II, 6.1, para. 6.0 (Welding - 10-12-84) III, 2.3 (Issuing of Materials, Components, and Spare Parts-7-29-85) III, 2.2 (Receipt Inspection, Handling, and Storage - 12-23-85)	DPM N73M2 (Specification for Welding Materials Control - 1-13-83) (P.S. 1.M.3.1)	M&AI-5 (R8) (Welding Material Control) AI-36 (R8) (Storage, Handling, and Shipping of QA Material) AI-11 (R34) (Receipt Inspection)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 Table 17D-3, item F, Regulatory Guide 1.33, (Revision 2), February 1978 'Quality Assurance Program Requirements (Operations)' (Endorses ANSI N18.7-1976) ANSI N18.7-1976/ANS-3.2 Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants 5.2.13.3 Identification and Control of Materials, Parts and Components. Measures shall be provided for the identification and control of materials, parts, and components including partially fabricated subassemblies. These procedures shall be implemented to provide insurance that only correct and accepted items are used and installed, and relating an item of production (batch, lot, component, part) at any stage, from initial receipt through fabrication, installation, repair or modification, to an applicable drawing, specification, or other pertinent technical document. Physical identification shall be used to the maximum extent possible. Where physical identification is either impractical or insufficient, physical separation, procedural control or other appropriate means shall be employed. Identification may be either on the item or on records traceable to the item, as appropriate. • • • When codes, standards or specifications require traceability of materials, parts or components to specific inspection or test records, the program shall be designed to provide such traceability.	II, 6.2, para. 6.0 (Welding 10-12-84)	DPM N73M2 (Specification for Welding Materials Control - 1-13-83) (P.S. 1.M.3.1)	M&AI-5 (R8) (Welding Material Control) AI-36 (R8) (Storage, Handling, and Shipping of QA Material)

Welding Requirements Implementation Matrix

Requirement Area: Control of Special Processes

Prepared By: D. F. Jaquith

Date: December 21, 1985

Requirement Area: Control of Special Processes

Applicability to the Welding Program:

Fully applies to welding, heat treatment, and nondestructive examination of safety-related items at TVA's operating nuclear plants.

Assessment Summary:

With the exception of the following procedural deficiencies and areas for improvement, the requirements for control of special processes are considered to be adequately implemented by procedures and instructions.

Procedural deficiencies:

-- The NQAM procedures and site-implementing instructions for welding activities do not adequately address the TVA Topical Report (TVA-TR75-1A), Section 17.2.9 requirement which states "the Office of Nuclear Power ensures that personnel (external to TVA) performing special processes under their cognizance are qualified . . ."

The procedures on procurement document preparation properly address requirements for contractors performing welding services to have qualified and certified personnel. However, there are no procedural instructions for the review of welder's qualifications before the commencement of welding activities when performed by contractors on site. This is not an implementation deficiency based on discussions with the Plant QA Staff that contractor welder qualifications are reviewed prior to welding.

-- Program Procedure DPM N73M2, Process Specification O.C.1.1 allows the welder foreman to perform preweld inspections on structural items. This does not agree with ANSI N45.2.5 and N18.7 which require use of certified inspection personnel independent of the job function.

-- SQN M&AI-11 does not establish responsibilities for the performance of preweld inspections by a certified QC Inspector when required by the design drawings for the fabrication and installation of seismic supports (reference commitment to ANSI N45.2.5).

Areas for improvement:

-- The Topical Report (Section 17.2.9, fourth paragraph) needs clarification that the Plant QA Staff only reviews implementing instructions (workplans, maintenance instructions, and maintenance requests) controlling special processes to verify that quality assurance requirements and acceptance criteria are incorporated.

-- SQN M&AI-1 does not clearly address responsibilities of the cognizant engineer and Plant QA Staff at the completion of heat treatment activities as described in NQAM, Part II, Section 6.2, paragraph 2.3.

-- SQN TI-51 needs to address the requirements from NQAM, Part II, Section 6.3, paragraph 2.0 on NDE performance and documentation.

Recommended corrective action:

- Division of Quality Assurance - Quality Systems Branch and Plant QA Staff jointly coordinate revision of the NQAM and site-implementing instructions to cover requirements from the Topical Report on the review by TVA personnel of contractor welder qualifications before the start of welding activities.

-- Division of Quality Assurance - Quality Systems Branch revise Topical Report (Section 17.2.9) to clarify that the Plant QA Staff reviews only implementing instructions controlling special processes (i.e., workplans, maintenance instructions, and maintenance requests).

- Division of Quality Assurance - Quality Systems Branch and Plant QA Staff jointly coordinate revision of M&AI-1 and TI-51 to include the areas for improvement.

-- Division of Nuclear Services, Mechanical Branch and Division of Quality Assurance, Quality Systems Branch jointly coordinate with the Office of Engineering to establish appropriate requirements for structural preweld inspections.

-- Division of Quality Assurance - Plant QA Staff coordinate revision of SQN M&AI-11 to establish responsibility for preweld fitup inspection.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **IX. CONTROL OF SPECIAL PROCESSES** Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.	II, 6.1 (Welding - 10-12-85) II, 6.2 (Heat Treatment - 10-12-84) II, 6.3 (NDE - 3-26-85)	DPM N73M2 (Process Specifications for Welding, Heat Treatment - 12-20-85) PMP 0202.14 (Certification of NDE Personnel - 3-6-85) PMP 1502.07 (NDE Procedures - 1-18-85) PMP 1403 TS 09.04.02 (Surface Preparation of Welds for NDE - 3-30-84)	M&AI-1 (R9) (Weld Documentation and Heat Treatment) SQM17 (R2) (Welding Requirements) TI-51 (R29) (NDE Procedures) AI-20 (R10) (Inspection Program) AI-15 (R14) (Torch Cutting, Welding, . . . Work Permit)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
TVA Topical Report (TVA-TR75-1A) R8 17.2.9 Control of Special Processes Special processes, including welding, heat tre[illegible] and nondestructive testing, are identified and controll[illegible] ensure they are accomplished according to approved written qualified procedures. Procedures are qualified in accordance with applicable codes and standards or, where no appropriate standards exist, to TVA requirements. As required by applicable codes and standards, personnel performing these special processes are qualified and their qualifications are documented. Applicable codes, standards, specifications, criteria, and other special requirements are id[illegible]ntified and used in qualifying procedures and personn[illegible]d to accomplish special processes. The Office of Nuclear Power ensures that personnel (both internal and external to TVA) performing special processes under their cognizance are qualified and are using procedures qualified to meet applicable codes, specifications, and standards. Special process procedures submitted by outside contractors in accordance with procurement documents and all TVA special process procedures are reviewed and approved by NEC PE. Instructions for performing special processes are prepared when it becomes necessary to apply a specific special process in the maintenance, repair, or modification of some portion of the CSSC. The Plant QA Staff reviews procedures and instructions controlling special processes to verify that quality assurance requirements and acceptance criteria are incorporated. They verify that the special processes are performed by qualified personnel. The current procedures are maintained by the responsible supervisor.	II, 6.1 (Welding-10-12-84); II, 6.2 (Heat Treatment - 10-12-84) II, 6.2 (NDE - 3-26-84) III, 2.1 (Procurement - 12-23-85) III, 1.1 (Document Control - 3-21-85)	PMP N73M2 (Process Specifications for Welding, Heat Treatment-12-20-85) PMP 1502.07 (NDE Procedures - 1-18-85) PMP 0202.14 (Certification Program for NDE Personnel - 3-6-85) PMP 1403 TS 09.04.02 (Surface Preparation of Welds for NDE - 3-30-84)	M&AI-1 (R9) (Weld Documentation and Heat Treatment) SQM17 (R2) (Welding Requirements) TI-51 (R29) (NDE Procedures) AI-20 (R10) (Inspection Program) SQA45 (R18) (Quality Control of Material and Parts and Services) AI-4 (R50) (Document Control) AI-19, Part IV (R12) (Plant Modifications) AI-32 (R2) (Surveys)
Area of Improvement: Topical Report needs clarification that the Plant QA Staff only reviews implementing instructions.	Minor procedural deficiency: The NQAM and SQN implementing instructions do not address the TVA review of contract welders' qualifications before the start of welding activities.		

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report, (TVA-TR75-1A), R8 Table 17D-3, Item F, Regulatory Guide 1.33, (Revision 2), February 1978 'Quality Assurance Program Requirements (Operations)' (Endorses ANSI N18.7-1976) ANSI N18.7-1976/ANS 3.2 Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants			
5.2.18 Control of Special Processes. Measures shall be established and documented to assure that special processes, accomplished under controlled conditions in accordance with applicable codes, standards, specifications, criteria, and other special requirements, use qualified personnel and procedures. Qualification of personnel, procedures, and equipment shall comply with the requirements of applicable codes and standards. Special processes are those that require interim inprocess controls in addition to final inspection to assure quality including such processes as welding, heat treating, chemical cleaning, and nondestructive examination. For special processes not covered by existing codes or standards, or where item quality requirements exceed the requirements of established codes or standards, the necessary qualifications of personnel, procedures, or equipment shall be defined.	II, 6.1 (Welding - 10-12-85) II, 6.2 (Heat Treatment - 10-12-85) II, 6.3 (NDE - 3-26-85)	DPM N73M2 (Process Specifications for Welding, Heat Treatment - 12-20-85) PMP 0202.14 (Certification of NDE Personnel - 3-6-85) PMP 1502.07 (NDE Procedures - 1-18-85) PMP 1403 TS 09.04.02 (Surface Preparation of Welds for NDE - 3-30-84)	M&AI-1 (R9) (Weld Documentation and Heat Treatment) SQM17 (R2) (Welding Requirements) TI-51 (R29) (NDE Procedures) AI-20 (R10) (Inspection Program) AI-19, Part IV (R12) (Plant Modifications) SQM1 SQM2

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A), R8 Table 17D-3, item J, Comment for Regulatory Guide 1.58 (endorses ANSI N45.2.6-1978): TVA's alternative to qualifying personnel using the levels of capabilities outlined in Section 3 of N45.2.6 will be to qualify them to internal TVA levels of capability. Qualifications requirements are established and listed in the TVA job description for inspection, examination, and testing positions. Only personnel satisfying these requirements are selected to fill these positions. Any additional training received by personnel will be documented. Appropriate quality assurance groups will provide certificates for documenting this training. ASNT recommended practice SNT-TC-1A - 1980 will be used to qualify and certify nondestructive examination personnel. Personnel currently certified to SNT-TC-1A-1975 are not required to recertify to SNT-TC-1A-1980.			

WELDING REQUIREMENTS IMPLEMENTATIOI MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING Recommended Practice No. SNT-TC-1A • June 1980 Edition PERSONNEL QUALIFICATION AND CERTIFICATION IN NONDESTRUCTIVE TESTING **1. SCOPE** 1.1 It is recognized that the effectiveness of nondestructive testing (NDT) applications depends upon the capabilities of the persons who are responsible for, and perform, nondestructive testing. This Recommended Practice has been prepared to establish guidelines for the qualification and certification of nondestructive testing personnel whose specific jobs require appropriate knowledge of the technical principles underlying the nondestructive tests they perform, witness, monitor, or evaluate. ⋮ **3. NONDESTRUCTIVE TEST METHODS** 3.1 Qualification and certification of nondestructive testing personnel in accordance with this Recommended Practice is applicable to each of the following methods: (1) Radiographic Testing (RT) (2) Magnetic Particle Testing (MT) (3) Ultrasonic Testing (UT) (4) Liquid Penetrant Testing (PT) (5) Eddy Current Testing (ET) (6) Neutron Radiographic Testing (NRT) (7) Leak Testing (LT) (8) Acoustic Emission (AE)	II, 6.2 (NDE-3-26-85)	PMP 0202.14 (Certification of NDE Personnel - 3-6-85)	AI-20 (R10) (Inspection Program) TI-51 (R29) (NDE Procedures)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI/ASME N45.2.6-1978 QUALIFICATIONS OF INSPECTION, EXAMINATION AND TESTING PERSONNEL FOR NUCLEAR POWER PLANTS **1. INTRODUCTION** **1.1 Scope** This Standard delineates the requirements for the qualification of personnel who perform inspection, examination, and testing to verify conformance to specified requirements of nuclear power plant items (structures, systems, and components of nuclear power plants) whose satisfactory performance is required to prevent postulated accidents which could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents if they were to occur. The requirements may also be extended to other items of nuclear power plants when specified in contract documents. **1.2 Applicability** The requirements of this Standard apply to personnel who perform inspections, examinations, and tests during fabrication prior to and during receipt of items at the construction site, during construction, during preoperational and startup testing, and during operational phases of nuclear power plants. The requirements of this Standard do not apply to personnel who perform inspections for government or municipal authorities, or who perform as authorized inspectors in accordance with the ASME Boiler and Pressure Vessel Code.	II, 5.3A (Training and Certification for QC Inspectors-10-12-84)		AI-20 (R10) (Inspection Program) AI-11 (R34) (Receipt Inspection) AI-34 (R1) (Training and Certification Program for QC Inspectors)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI/ASME N45.2.6-1978 1.2 (continued) The requirements of this Standard are not intended to apply to personnel who only perform inspection, examination, or testing in accordance with ASNT "Recommended Practice No. SNT-TC-1A", since these personnel are certified in accordance with the requirements of SNT-TC-1A and its applicable supplements.			

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 Table 17D-3, item R **Regulatory Guide 1.94, (Revision 1), April 1976 - 'Quality Assurance Requirements for Installation, Inspection, and testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants' (Endorses N45.2.5-1974)** **COMMENT** **For modifications or repairs to structures within the scope of N45.2.5-1974, NUC PR would refer back to the Office of Engineering for any design analyses. TVA will comply with N45.2.5-1974 except as indicated in Section 3.8.3.6.1 of the Yellow Creek PSAR.**			
ANSI N45.2.5-1974 SUPPLEMENTARY QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION, AND TESTING OF STRUCTURAL CONCRETE AND STRUCTURAL STEEL DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS 2.4 Personnel Qualifications Personnel performing tests and inspections required by this standard shall be qualified in accordance with ANSI N45.2.6. Personnel performing field inspection and testing activities shall be certified for Level I capability. On-site supervisors of Level I personnel shall be certified for Level II capability and shall be responsible for the proper performance of on-site inspections and tests. Persons charged with engineering managerial responsibility of the inspection and testing organization at the site in either a resident or nonresident capacity shall be certified for Level III capability. Personnel performing nondestructive examinations shall be qualified to appropriate levels of capability as specified in American Society for Nondestructive Testing Recommended Practice SNT-TC-1A.	II, 5.3A (Training & Cert. for QC Inspectors - 10-12-84) *NOT APPLICABLE TO TVA; SEE NOTES FOR ANSI N45.2.6* II, 6.3 (NDE-3-26-85)	PMP 0202.14 (Certification of NDE Personnel - 3-6-85) (Formerly DPM N75C01)	AI-20 (R10) (Inspection Program) AI-34 (R1) (Training and Certification of QC Inspectors) AI-20 (R10) (Inspection Program) para. 5.2 TI-51 (R29) (NDE Procedures)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.5 (continued) 5.5 Welding Inspection of structural steel welding shall be performed in accordance with the provisions of AWS D1.1, Section 6, entitled "Structural Welding Code," and supplemental addenda. This inspection shall include visual examination of preparations, welding processes, and post-welding operations. Prior to welding, verification of welding procedure and welder qualification shall be documented and shall include all essential variables identified in the procedure. In-process inspections shall include joint fit up prior to start of welding, preheat and interpass temperature requirements, filler metal, control of distortion and post-weld heat treatment and cleaning requirements. Procedures shall be established to control the purchase, receiving, distribution, storage, and use of welding electrode. Weld repairs necessitated by visual or nondestructive examinations shall be made in accordance with the procedure used to perform the original weld or a qualified repair procedure and re-inspected by the same method which disclosed the repairable defect. All weld repairs necessitated by nondestructive examination shall be documented.	II, 6.1 (Welding - 10-12-84) II, 6.2 (Heat Treatment - 12-12-84) II, 6.3 (NDE 3-26-85) II, 5.4 (Survey - 10-12-84) III, 2.1 (Procurement - 12-23-85) III, 2.2 (Receipt Inspection - 12-23-85)	DPM N73M2 (Process Specifications for Welding, Heat Treatment - 12-20-85) Procedural Deficiency: P.S.O.C.1.1 allows welder foreman to perform preweld inspections. PMP 1502.07 (NDE Procedures - 1-18-85) Procedural Deficiency: SQN M&AI-11 does not require the performance of preweld inspections.	M&AI-1 (Welding Documentation and Treatment) SQM17 (R2) (Welding Requirements) TI-51 (R29) (NDE Procedures) AI-32 (R2) (Surveys) AI-11 (R34) (Receipt Inspection) SQA45 (R18) (Quality Control of Material and Parts and Services) AI-36 (R8) (Storage, Handling, and Shipping) M&AI-5 (R8) (Welding Material Control Procedure) M&AI-11 (R11) (Fabrication, Installation, and Documentation of Seismic Supports and Supports Attached to Seismic Category I Structures)

Welding Requirements Implementation Matrix

Requirement Area: Inspection

Prepared By: D. F. Jaquith

Date: January 17, 1986

Requirement Area: Inspection

Applicability to the Welding Program:

Inspection of welds, receipt inspection of welding material, and inservice inspection.

Assessment Summary:

With the exception of the following area for improvement, the requirements for welding inspection, receipt inspection, and inservice inspection are considered to be adequately implemented by procedures and instructions.

Area for improvement:

SQN M&AI-1, paragraph 6.4 should be clarified to require the concurrence of the Plant QA Staff when QC holdpoints are waived or bypassed. NQAM, Part III, Section 1.1, paragraph 4.4.3.4.b requires the concurrence of the Plant QA Staff.

Recommended corrective action:

- Division of Quality Assurance - Plant QA Staff coordinate revision of SQN M&AI-1 to require the concurrence of the Plant QA Staff when QC hold points are waived or bypassed.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **X. INSPECTION** A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. Such inspection shall be performed by individuals other than those who performed the activity being inspected. Examinations, measurements, or tests of material or products processed shall be performed for each work operation where necessary to assure quality. If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment, and personnel shall be provided. Both inspection and process monitoring shall be provided when control is inadequate without both. If mandatory inspection hold points which require witnessing or inspecting by the applicant's designated representative and beyond which work shall not proceed without the consent of its designated representative are required, the specific hold points shall be indicated in appropriate documents.	II, 5.1 (ISI - 10-12-84) II, 5.3 (Inspection Program - 10-12-84) II, 6.3 (NDE - 3-26-85) II, 5.3A (Training and Certification Program for QC Inspectors-10-12-84)	PMP 1502.07 (NDE Procedures - 1-28-85) PMP 0202.14 (Certification of NDE Personnel - 3-6-85)	AI-20 (R10) (Inspection Program) TI-51 (R29) (NDE Procedures) AI-34 (R34) (Training and Certification of QC Inspectors) SI-114.1 (R6) and SI-114.2 (R6) (ASME Section XI, ISI Program) AI-11 (R34) (Receipt Inspection) Area for Improvement: SQN M&AI-1, paragraph 6.3, should be clarified to require the concurrence of the Plant QA Staff when QC holdpoints are waived or bypassed. NQAM, Part III, Section 1.1, paragraph 4.4.3.4.b requires the concurrence of the Plant QA Staff.

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.10 Inspection Inspection is performed during maintenance, modification, repair, material receiving, and storage activities affecting the quality of CSSC items at TVA plants to verify conformance with applicable requirements. Instructions covering these activities contain appropriate inspection requirements, including mandatory holdpoints, which are in accordance with the original design and inspection requirements or acceptable alternatives. Alternatives to original inspection requirements shall be in accordance with the requirements of applicable codes, standards, and regulations. The inspection program at TVA's licensed plants is developed by the Manager of Nuclear Power. This program is conducted by qualified personnel reporting independently of the organization performing the work. Monitoring of inspection activities is performed by Plant QA Staff when they do not have direct inspection responsibility. The Plant Manager implements the program. Inspections requiring expertise in a particular area such as preservice and inservice inspection, certain nondestructive testing, containment vessel leak rate tests and inspections, and inspection of nuclear fuel at the supplier facility are the responsibility of central office, or offsite personnel. This program is conducted in accordance with written approved instructions which specify, as appropriate, inspection scope, personnel qualification requirements; necessary drawings and specifications; inspection method description; inspection equipment requirements (current calibration, pressure limitations, cleanliness, etc.); limiting conditions; environmental conditions; prerequisite conditions, acceptance and rejection criteria; data collection requirements; and documentation approval, retention, and storage requirements. These instructions are reviewed by PORC and approved by the Plant Manager. • • • Personnel performing inspection activities are qualified in accordance with applicable codes, standards, and TVA training programs. The immediate supervisor of personnel requiring qualification is responsible for assuring that the qualifications are maintained current. • • •	II, 5.3 (Inspection Program - 10-12-84) II, 6.3 (NDE - 3-26-85) II, 5.1 (ISI - 10-12-84) II, 5.3A (Training and Certification Program for QC Inspectors - 10-12-84) III, 1.1 (Document Control - 3-21-85)	PMP 1502.07 (NDE Procedures - 1-18-85) PMP 0202.14 (Certification of NDE Personnel - 3-6-85)	AI-20 (R10) (Inspection Program TI-51 (R29) (NDE Procedures) AI-34 (R34) (Training and Certification of QC Inspectors) AI-11 (R34) (Receipt Inspection) SI-114.1 (R6) and SI-114.2 (R6) (ASME Section XI, ISI Program) AI-4 (R50) (Document Control)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report, (TVA-TR75-1A) R8, Table 17D-3, Item F, Regulatory Guide 1.33, (Revision 2), February 1978 'Quality Assurance Program Requirements (Operations)' (Endorses ANSI N18.7-1976) ANSI N18.7-1976/ANS 3.2 **Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants** **5.2.17 Inspections.** A program for inspection of activities affecting safety shall be established and executed by or for the organization performing the activity to verify conformance with applicable documented instructions, procedures, and drawings. Inspections, examinations, measurements, or tests of material, products, or activities shall be performed for each work operation where necessary to assure quality. Such inspections shall be performed by qualified individuals other than those who performed or directly supervised the activity being inspected. Inspection of operating activities (work functions associated with normal operation of the plant, routine maintenance, and certain technical services routinely assigned to the onsite operating organization) may be conducted by second-line supervisory personnel or by other qualified personnel not assigned first-line supervisory responsibility for conduct of the work. These independent inspections, i.e., those performed by individuals not assigned first-line supervisory respon-	II, 5.3 (Inspection Program - 10-12-84) II, 6.3 (NDE - 3-26-85)	PMP 1502.07 (NDE Procedures - 1-18-85) PMP 0202.14 (Certification of NDE Personnel - 3-6-85)	AI-20 (R10) (Inspection Program) TI-51 (R29) (NDE Procedures) AI-34 (R34) (Training and Certification of QC Inspectors)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-23-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N18.7-1976 (continued) 5.2.17 Inspections (continued) sibility for the conduct of the work, are not intended to dilute or replace the clear responsibility of first-line supervisors for the quality of work performed under their supervision. For modifications and nonroutine maintenance, inspections shall be conducted in a manner similar (frequency, type, and personnel performing such inspections) to that associated with construction phase activities (see also Section 5.2.7). Inspections of safety-related activities shall be performed in accordance with approved written procedures, which set forth the requirements and acceptance limits and specify the inspection responsibilities. If mandatory inspection hold points are required, the specific hold points shall be indicated in appropriate documents. Information concerning inspection shall be obtained from the related design drawings, specifications and/or other controlled documents. When inspection techniques require specialized qualifications or skills, personnel performing the inspection shall meet applicable licensing requirements, codes, and standards appropriate to the discipline involved (see also Sections 5.2.7, 5.2.6 and 5.3.10).			

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-17-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 Table 17D-3, item N Regulatory Guide 1.116, Revision 0-R - 'Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants' (Endorses N45.2.8-1975) ANSI N45.2.8-1975 SUPPLEMENTARY QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION AND TESTING OF MECHANICAL EQUIPMENT AND SYSTEMS FOR THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS 1. INTRODUCTION 1.1 Scope This standard contains requirements and guidelines to assure the quality of important items of nuclear power plants including structures, systems and components. The requirements and guidelines are intended to assure that these important items are installed, inspected and tested in a manner that will provide adequate confidence that they will perform satisfactorily in service. The requirements and guidelines for installation, inspection and testing activities during construction are intended to assure the quality of mechanical items not covered by Section III of the ASME Boiler and Pressure Vessel Code. The requirements of this standard deal with the protection and control necessary to assure that the requisite quality of mechanical items of the plant are preserved from the time items are re-			

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-17-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.8-1975 (Continued)			
moved from storage or receiving until they are incorporated into the plant up to but not including fuel loading of PWR plants and the completion of cold functional testing of BWR and HTGR plants. This standard is intended to be used in conjunction with ANSI N45.2. If any conflict exists, ANSI N45.2 shall govern.			
4.3 Examination Nondestructive examinations, when required, shall be performed to approved applicable procedures. Examples of these examinations are liquid penetrant, magnetic particle, ultrasonic, eddy current and radiography.	II, 6.3 (Nondestructive Examination- 3-26-85)	PMP 1502.07 (NDE procedures- 1-18-85) PMP 0202.14 (Certification of NDE Personnel- 3-6-85)	AI-20 (R10) (Inspection Program) TI-51 (R29) (NDE Procedures)
4.4 Inspection Inspections of the work areas and the work in progress shall be performed to verify that mechanical items are being located, installed, assembled or connected in compliance with the latest approved-for-construction drawings, manufacturers' instructions, codes, installation instructions and procedures. Inspections performed shall include as appropriate, but not be limited to, the following: a. Identification. b. Location and orientation of components. c. Levelling and alignment. d. Clearances and tolerances. e. Tightness of connections and fastenings. f. Fluid levels and pressures. g. Absence of leakage.	II, 5.3 (Inspection Program- 10-12-84) II, 5.3A (Training and Certification Program for QC Inspectors)		AI-20 (R10) (Inspection Program) AI-34 (R34) (Training and Certification of QC Inspectors)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-17-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.8-1975 (Continued)			
h. Physical integrity. i. Cleanness. j. Welding operations including materials and process controls, adequate purging, and the removal of purge dams on completion. k. Adequacy of protective measures to assure that the item will not be damaged during installation. l. Adequacy of housekeeping, barriers and protective equipment to assure that items will not be damaged or contaminated as a result of adjacent construction activities.	II, 6.3 (NDE - 3-26-85)	PMP 1502.07 (NDE Procedures - 1-18-85) PMP 0202.14 (Certification of NDE Personnel- 3-6-85)	AI-20 (R10) (Inspection Program) TI-51 (R29) (NDE Procedures)

Welding Requirements Implementation Matrix

Requirement Area: Handling, Storage, and Shipping

Prepared By: R. P. Lynskey

Date: December 19, 1985

Requirement Area: Handling, Storage, and Shipping

Applicability to the welding program:

Controls over handling, storage, and shipping of welding material such as electrodes, fluxes, welding wire, and consumable inserts.

Assessment Summary:

Requirements for handling, storage, and shipping of welding material are considered to be adequately implemented by procedures and instructions.

RPL:KC
12/30/85
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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **XIII. HANDLING, STORAGE, AND SHIPPING** Measures shall be established to control the handling, storage, shipping, cleaning, and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. When necessary for particular products, special protective environments, such as inert gas atmosphere, specific moisture content levels, and temperature levels, shall be specified and provided.	III, 2.2 (Receipt Insp., Handlg, Storage - 12-23-85); III, 2.3, (Issuing of Materials, Components, and Spare Parts - 7-29-85)	DPM N73M2 (P.S. 1.M.3.1) (Specification for Welding Materials Control - 1-13-83)	M&AI-5 (R7) (Welding Material Control) AI-36 (R8) (Storage, Handling, and Shipping of QA Material)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.13 Handling, Storage, and Shipping All items under the scope of the quality assurance program are handled, stored, cleaned, and shipped in a manner to prevent deterioration, contamination, damage, or loss of identification. General procedures are prepared for application to these activities. As appropriate, detailed instructions are issued for handling, cleaning, storing, maintaining while stored, or shipping specific items or types of equipment or material. Under normal circumstances the manufacturer's instructions or recommendations are followed and are implemented to maintain material integrity and protection. Personnel performing these activities are knowledgeable of the work to be performed and procedures employed. Periodic surveillance is conducted by the Plant QA Staff of areas where materials are being handled or stored and deficiencies shall be reported to responsible management.	III, 2.2 (Receipt Insp., Handling, Storage-12-23-85); III, 2.3 (Issuing of Materials, Components, and Spare Parts - 7-29-85)	DPM N73M2 (P.S. 1.M.3.1) (Specification for Welding Materials Control - 1-13-83)	M&AI-5 (R7) (Welding Material Control) AI-36 (R8) (Storage, Handling, and Shipping of QA Material)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8, Table 17D-3, item H, Comment for: Regulatory Guide 1.38, (Revision 2), May 1977 - 'Quality Assurance Requirements for Packaging, Shipping, Receiving Storage, and Handling of Items for Water-Cooled Nuclear Power Plants' (endorses N45.2.2-1972) * 1. TVA does not utilize specific levels of classification for purposes of packaging, shipping, receiving, storage and handling (ANSI N45.2.2, Section 2.7). All purchased items undergo receiving inspection. This inspection verifies that items have been properly packaged for shipment and will assure that any special protective measures specified in the standard to prevent damage, deterioration, or contamination will be imposed until the item or component is issued for use. 2. TVA takes exception to the requirement (ANSI N45.2.2, Section 6.2.4) that salt-tablet dispenser in any storage area shall not be permitted. TVA Power Stores Unit stores salt-tablet dispensers in sealed containers for use outside of the storage area only.	III, 2.3 (Issuing of Materials, Components, and Spare Parts - 7-29-85)		AI-36 (R8) (Storage, Handling, and Shipping of QA Material)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A), R8, Table 17D-3, item H, comments for Regulatory Guide 1.38 (continued) 3. TVA's alternative to the requirements of Section 6.6 of ANSI N45.2.2 is as follows: Power Stores will maintain written records of pertinent information such as storage location and receipt inspection results and will take necessary action to provide packaging for items not suitably packaged for storage. Written records of personnel access to Power Stores are kept for entry during times when Power Stores personnel are not on duty. All other times, the storeroom is locked and admittance is controlled by stores personnel.			AI-36 (R8) (Storage, Handling, and Shipping of QA Material)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.2-1972 PACKAGING, SHIPPING, RECEIVING, STORAGE AND HANDLING OF ITEMS FOR NUCLEAR POWER PLANTS **1. INTRODUCTION** **1.1 Scope** This standard defines requirements for packaging, shipping, receiving, storage, and handling of nuclear power plant items. These items include the parts of structures, systems, and components whose satisfactory performance is required for the plant to operate reliably, to prevent accidents that could cause undue risk to the health and safety of the public, or to mitigate the consequences of such accidents if they were to occur. The requirements stated herein deal with the protection and control necessary to assure that the requisite quality of those important parts of the plant are preserved from the time items are fabricated until they are incorporated in the plant.	III, 2.2 (Receipt Insp, Handling, Storage - 12-23-85); III 2.3 (Issuing of Materials, Components, and Spare Parts - 7-29-85)		AI-36 (R8) (Storage, Handling, and Shipping of QA Material) SQA45 (R18) (Quality Control of Material, Parts, and Services)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-19-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report, (TVA-TR75-1A) R8, Table 17D-3, item F, Regulatory Guide 1.33, (Revision 2), February 1978 'Quality Assurance Program Requirements (Operations)' (Endorses ANSI N18.7-1976) ANSI N18.7-1976/ANS 3.2 Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants **5.2.13.4 Handling, Storage and Shipping.** Measures shall be provided to control handling, storage and shipping, including cleaning, packaging and preservation of material and equipment in accordance with established instructions, procedures or drawings, to prevent damage, deterioration and loss. When necessary for particular items, special coverings, special equipment and special protective environments, such as inert gas atmosphere, specific moisture content levels and temperature levels shall be specified, provided, and their existence verified. • • • Attention shall be given to providing adequate instructions for marking and labeling of items for packaging, shipment and storage. Marking shall be adequate to identify, maintain and preserve the shipment, including indication of the presence of special environments or the need for special control. • • •	III, 2.3 (Issuing of Materials, Components, and Spare Parts - 7-29-85)	DPM N73M2 (P.S. 1.M.3.1) (Specification for Welding Materials Controls - 1-13-85)	AI-36 (R8) (Storage, Handling, and Shipping of QA Material) M&AI-5 (R7) (Welding Material Control)

Welding Requirements Implementation Matrix

Requirement Area: Quality Assurance Records

Prepared By: R. P. Lynskey

Date: December 21, 1985

Requirement Area: Quality Assurance Records

Applicability to the welding program:

Retention of welding records such as detail weld procedures, welding procedure qualification records, welding performance qualification records, welder qualification continuity records, weld data sheets, workplans and maintenance requests related to welding.

Assessment Summary:

With the exception of the following area for improvement, the requirement for retention of welding records is considered to be adequately implemented by procedures and instructions.

Area for improvement:

The NQAM and SQN site administrative instructions do not clearly state all types of and retention times for welding records. Following are examples:

-- ANSI N45.2.9-1974 lists specific types of records (such as ferrite test procedures, ferrite test results, heat treatment records, weld location diagrams) which are not spelled out in all cases in QA records procedures and instructions.

- The requirements for welder performance qualification records are not clearly delineated.

Recommended corrective action:

- Division of Quality Assurance - QSB and Plant QA Staff jointly review ANSI N45.2.9-1974 for specific types of QA records applicable to nuclear operations and ensure inclusion of those in NQAM, Part III, Section 4.1 and SQN AI-7. Also ensure actual retention of those types of records required to be retained but not presently spelled out in QA records procedures and instructions. Any types of QA records not presently being retained as required should be reported and corrective action taken in accordance with SQN corrective action program.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50, Appendix B **XVII. QUALITY ASSURANCE RECORDS** Sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include at least the following: operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses. The records shall also include closely-related data such as qualifications of personnel, procedures, and equipment. Inspection and test records shall, as a minimum, identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted. Records shall be identifiable and retrievable. Consistent with applicable regulatory requirements, the applicant shall establish requirements concerning record retention, such as duration, location, and assigned responsibility.	III, 4.1 (QA Records - 5-15-85); II, 6.1, para. 7.0 (Welding - 10-12-84); II, 6.2, para. 4.0 (Heat Treatment-10-12-84); II, 6.3, para. 5.0 (NDE - 3-26-85); II, 5.1, para. 1.3 (ISI-10-12-84); II, 5.3, para. 5.0, 6.0, 8.0 (Maintenance & Modification Inspection Program - 10-12-84)		AI-7 (R36) (Recorder Charts and QA Records) AI-20 (R10) (Inspection Program)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8 17.2.17 Quality Assurance Records Quality assurance records are those completed records which furnish documentary evidence of the quality of CSSC items or of activities affecting the quality of the CSSC and those records required by the administrative section of each nuclear plant's technical specifications. Quality assurance records include but are not limited to the following: 1. Records compiled during the design and construction of the plant, including design drawings, construction logs and results of reviews, inspections, tests, audits, monitoring of work performance, materials analyses, and other similar documents. 2. Documents and records compiled during operation, including operating logs; maintenance and modification records; reportable occurrences; results of reviews, inspections, test audits, and material analyses; monitoring of work performance; qualification of personnel, procedures, and equipment; specifications; procurement documents; calibration records; and nonconformance reports and corrective action. NDC PE establishes requirements for the collection, classification, and storage requirements of design and procurement records and the transfer of construction records and required design records. In addition, NDC PE establishes requirements for the collection and classification of operation records and for retention and storage of construction and design quality assurance records transferred from Office of Engineering and CONST. The Manager of Nuclear Power establishes a records control system which includes (1) a records checklist designating the required quality assurance records, (2) a record of quality assurance records received, (3) procedures for receipt and inspection of incoming quality assurance records, (4) provisions for a current and accurate assessment of the status of quality assurance records, and (5) establishment of records storage facilities to ensure records availability and protection. NDC PE coordinates the transfer of required quality assurance records from other offices to NDC PE. The Plant Manager provides storage, preservation, and safekeeping of the required quality assurance records in accordance with TVA-established requirements and regulatory requirements. He delineates plant personnel who have access to the files, implements a retrieval method, establishes an index before receipt of the records, and provides written instruction for distribution, transfer, and handling of quality assurance records.	III, 4.1 (QA Records - 5-15-85); II, 6.1, para. 7.0 (Welding - 10-12-84); II, 6.2, para. 4.0 (Heat Treatment-10-12-84); II, 6.3, para. 5.0 (NDE - 3-26-85); II, 5.1, para. 1.3 (ISI-10-12-84); II, 5.3, para. 5.0, 6.0, 8.0 (Maintenance & Mod. Insp. Prog-10-12-84); III, 4.2 (Transfer of QA Records from OE & OC - 10-12-84)		AI-7 (R36) (Recorder Charts and QA Records)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A), R8, Table 17D-3, item Q, Comments for:			
Regulatory Guide 1.88, (Revision 2), October 1976 - 'Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records' (Endorses N45.2.9):			
NUC PR will meet the requirements of Regulatory Guide 1.88 for protection of records from fire by storing records in containers or facilities which meet the applicable requirements of ANSI N45.2.9 or NFPA 232-1975 for Class 1 records. When NFPA 232 is used, worst case fire load analyses will be performed to verify that storage containers (generally fire-rated file cabinets) will provide protection against a complete burnout of the section of the building in which the records are located. Fire protection engineers will perform annual surveys to ensure that changes in fire loading have not invalidated the fire load analyses.	III, 4.1 (QA Records - 5-15-85)		

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.9-1974 REQUIREMENTS FOR COLLECTION, STORAGE, AND MAINTENANCE OF QUALITY ASSURANCE RECORDS FOR NUCLEAR POWER PLANTS 1. INTRODUCTION 1.1 Scope This standard provides general requirements and guidelines for the collection, storage, and maintenance of quality assurance records associated with the design, manufacture, construction, and operation phase activities of nuclear power plants. It is not intended to cover the preparation of the records, nor to include working documents not yet designated as quality assurance records. • • •	III, 4.1 (QA Records - 5-15-85); II, 6.1, para. 7.0, (Welding - 10-12-84); II, 6.2, para. 4.0 (Heat Treatment - 10-12-84); II, 6.3, para. 5.0 (NDE - 3-26-85)		AI-7 (R36) (Recorder Charts and QA Records)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequovah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N45.2.9 (continued) APPENDIX A The following is a list of types of records with the recommended minimum retention periods indicated (see paragraph 3.2.7). For definition of lifetime records see paragraph 2.2.1, and for nonpermanent records see paragraph 2.2.2. In the nonpermanent column the number indicates the retention period in years after which the record need not be maintained. The 0 years minimum recommended retention period is intended to permit dispositioning of the records on the day following the date of commercial operation. One year retention is intended to require maintenance of the record for the customary periods of warranty. Two year retention is intended to require maintenance of the record through the first overhaul or reload. Five and six year retention is intended to achieve compliance with regulatory requirements. Record Type — Lifetime — Nonpermanent A.3 Manufacturing Records Applicable Code Data Reports — X As-Built Drawings and Records — X Certificate of Inspection and Test Personnel Qualification — 0	III, 4.1 (QA Rec s - 5-15-85) Appendix I		AI-7 (R36) (Recorder Charts and QA Records)
		Area for Improvement Not all specific records types are listed although they are probably retained under generic procedures or under different names (e.g., ferrite test procedures, ferrite test results, heat treatment records, weld location diagrams).	Area for Improvement: Clarify the NQAM and AI-7 concerning the retention of Welder Perf. Qual. Records and Continuity Records.

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION

ANSI N45.2.9 (continued)

Record Types	Lifetime	Nonpermanent
A.3 Manufacturing Records (Cont.)		
Certificates of Compliance	X	
Cleaning Procedures		0
Eddy-Current Examination Procedure		2
Eddy-Current Examination Final Results	X	
Electrical Control Verification Test Results		2
Ferrite Test Procedure		2
Ferrite Test Results	X	
Forming and Bending Procedure Qualifications		0
Heat Treatment Procedures		0
Heat Treatment Records	X	
Hot Bending Procedure		0
Inspection and Test Instrumentation and Tooling Calibration Procedures and Records		(Until Recalibrated)
Liquid Penetrant Examination Procedure		2
Liquid Penetrant Examination Final Results	X	
Location of Weld Filler Material	X	
Magnetic Particle Examination Procedure		2
Magnetic Particle Examination Final Results	X	
Major Defect Repair Records	X	
Material Properties Records	X	
Nonconformance Reports	X	
Packaging, Receiving, Storage Procedures		0
Performance Test Procedure and Results Records	X	
Pipe and Fitting Location Report	X	
Pressure Test Procedure		2
Pressure Test Results	X	
Product Equipment Calibration Procedure		(Until Recalibrated)
Product Equipment Calibration Records		(Until Recalibrated)
QA System Audit Report		6
QA Manuals, Procedures and Instructions		2
Radiographic Procedures		2
Radiographic Review Forms and Radiographs	X	
Ultrasonic Examination Procedures		2
Ultrasonic Examination Final Results	X	
Welding Materials Control Procedures		2
Welding Personnel Qualification		2
Welding Procedure Qualifications and Data Reports		2
Welding Procedures	X	
Work Processing and Sequencing Documents		2
A.4 Installation-Construction Records		
A.4.1 Receiving and Storage		
Inspection Reports for Stored Items		0
Nonconformance Reports	X	
Receipt Inspection Reports on Items		1
Receiving, Storage, and Inspection Procedures		2
Storage Inventory and Issuance Records		0
Vendor Quality Assurance Releases		0

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION

ANSI N45.2.9 (continued)

Record Type	Lifetime	Nonpermanent
A.4 Installation-Construction Records (Cont.)		
• • •		
A.4.3 Welding		
Ferrite Test Procedures		2
Ferrite Test Results	X	
Heat Treatment Procedures		0
Heat Treatment Records	X	
Liquid Penetrant Test Procedures		2
Liquid Penetrant Test Final Results	X	
Magnetic Particle Test Procedures		2
Magnetic Particle Test Final Results	X	
Major Weld Repair Procedures and Results	X	
Radiographic Test Procedures		2
Radiographic Test Final Results	X	
Ultrasonic Test Procedures		2
Ultrasonic Test Final Results	X	
Weld Fit-Up Reports		1
Weld Location Diagrams		2
Weld Procedures	X	
Weld Procedures Qualifications and Results		2
Welding Filler Metal Material Reports	X	
Welding Materials Control Procedures		2
Welding Personnel Qualifications		2
• • •		
A.6 Operation Phase Activity Records		
A.6.1 Operation, Maintenance and Testing		
Records and Drawing Changes Reflecting Plant Design Modifications Made to Systems and Equipment Described in the Final Safety Analysis Report	X	
New and Spent Fuel Inventory, Transfers of Fuel, and Assembly Histories	X	
Plant Radiation and Contamination Survey Records	X	
Off-Site Environmental Monitoring Survey Records	X	
Radiation Exposure Records of All Plant Personnel, and Others who Enter Radiation Control Areas	X	
Radioactivity Levels of Liquid and Gaseous Waste Released to Environment	X	
Transient or Operational Cycling Records for Those Plant Components That Have Been Designed to Operate Safely for a Limited Number of Transients or Operational Cycles	X	
Current Individual Plant Staff Member Qualifications, Experience, Training and Retraining Records	X	
Reactor Coolant System In-Service Inspection Records	X	
Minutes of Meetings of the Plant Nuclear Safety Committee and Company Nuclear Review Board	X	
Normal Nuclear Unit Operation, including Power Levels and Periods of Operation at Each Power Level		5
Principal Maintenance Activities, Including Inspection, Repair, Substitution or Replacement of Principal Items of Equipment Pertaining to Nuclear Safety		5
Abnormal Occurrence Records		5
Periodic Checks, Inspections and Calibrations Performed to Verify that Surveillance Requirements are Being Met		5
Special Reactor Test or Experiment Records		5
Changes Made in the Operating Procedures		5
Radioactive Shipment Records		5

Welding Requirements Implementation Matrix

Requirement Area: Maintenance and Modifications

Prepared By: R. P. Lynskey

Date: December 21, 1985

Requirement Area: Maintenance and Modifications

Applicability to the Welding Program:

Maintenance and modifications involving welding of safety-related items.

Assessment Summary:

With the exception of the following area for improvement, the requirement for controls over welding-related maintenance and modifications is considered to be adequately implemented by procedures and instructions.

Area for improvement:

-- NQAM, Part II, Section 3.2 does not reference Part II, Section 2.3 for additional requirements which are applicable to repair/ replacement of ASME Section XI items.

Recommended corrective action:

-- Division of Quality Assurance - Quality Systems Branch revise NQAM, Part II, Section 3.2 to reference Part II, Section 2.3 for additional requirements that are applicable to repair and replacement of ASME Section XI items.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Topical Report (TVA-TR75-1A) R8, Table 17D-3, item F,			
Regulatory Guide 1.33, (Revision 2), February 1978 'Quality Assurance Program Requirements (Operations)' (Endorses ANSI N18.7-1976)			
ANSI N18.7-1976/ANS-3.2			
Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants			
5.2.7 Maintenance and Modifications. Maintenance or modifications which may affect functioning of safety-related structures, systems, or components shall be performed in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications and inspection requirements.	II, 3.2, para. 3.0 (Plant Mod.: After Licensing - 12-23-85);		MI-6.21 (R9) (Repairs and Replacements of ASME XI Items) AI-19, Part IV (R12) (Plant Modifications: After Licensing) SQM1 (R3) (Maintenance Program)
	Area for Improvement Procedure should refer to II, 2.3 for additional requirements for items within the scope of ASME XI.		
	II, 2.1, para. 1.0 & Scope, (Plt. Maint. - 4-18-85);		
	II, 2.3, para. 3.0 (Repairs & Replacement of ASME XI Items-4-3-85)	PMP 1402.02 (Preparation of Work Instructions for Repair and Replacement of ASME XI Items-3-20-85)	

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
ANSI N18.7-1976 (continued) Means for assuring quality of maintenance and modification activites (for example, inspections, measurements, tests, welding, heat treatment, cleaning, nondestructive examination and worker qualifications in accordance with applicable codes and standards) and measures to document the performance thereof shall be established. • • •	II, 3.2, para. 3.0 (Plant Mod.: After Licensing - 12-23-85); II, 2.1, par 3.0 and 4.0 (Plant Maintenance - 4-18-85); II, 2.3, para. 3.0 (Repairs and Replacement of ASME XI Items - 4-3-85)	PMP 1402.02 (Preparation of Work Instructions for Repair and Replacement of ASME XI Items-3-20-85)	MI-6.21 (R9) (Repairs and Replacements of ASME XI Items) AI-20 (R10) (Inspection Program) AI-19, Part IV (R12) (Plant Modifications: After Licensing) SQM1 (R3) (Maintenance Program) (Through reference to AI-4)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 12-21-85

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
TVA Topical Report (TVA-TR75-1A) R8 17.2.3.3 Modification • • • Procedures and instructions are developed and implemented to assure that the design, construction, installation, inspection, and testing of modifications to the CSSC meet quality assurance standards at least equal to those of the original installation. The testing assures system integrity and provides for evaluation of performance before system operation. Procedures and instructions related to equipment or systems that are modified shall be reviewed and updated to reflect the modification. Modification work is controlled by NUC PR in accordance with established policies and requirements. All work that affects a licensed facility is subject to the requirements of section 17.2. This includes modification work performed by NUC PR or others, such as the TVA Office of Construction (CONST) or an outside supplier. Modification work performed by CONST, an outside supplier, or others may be accomplished using their own procedures when approved by NUC PR as an acceptable means of meeting the requirements of Section 17.2. • • •	II, 3.2, paras. 3.0, 5.0, and 6.0 (Plant Modifications: After Licensing - 12-23-85) II, 2.3 (Repairs and Replacement of ASME XI Items - 4-3-85)	PMP 1402.02 (Preparation of Work Instructions for Repair and Replacement of ASME XI Items-3-20-85)	AI-19, Part IV (R12) (Plant Modifications) MI-6.2.1 (R9) (Repairs and Replacements of ASME XI Items)

Welding Requirements Implementation Matrix

Requirement Area: ASME Section XI Repairs, IWA-4000

Prepared By: G. J. Pitzl

Date: January 3, 1986

Requirement Area: ASME Section XI Repairs, IWA-4000

Applicability to the welding program:

Implementation of repair program requirements such as specifying the Code of Record, repair procedures, nondestructive examination procedures, pressure test procedures, Authorized Inspection Agency, and records.

Assessment Summary:

With the exception of the following area of improvement, the requirement for an ASME Section XI repair program is considered to be adequately addressed by procedures and instructions.

Area for improvement:

-- Site instructions MI 6.21 and AI-19 (Part IV) do not reference Standard Practice SQM-17, General Welding Requirements for Nuclear Plants. MI 6.21 does not adequately address consideration of applicable quality assurance records as required by IWA-6000 of ASME XI. MI 6.21 also does not give guidance on use of Data Sheet 4, Verification of Acceptability.

Recommended corrective action:

-- Division of Nuclear Services, Mechanical Branch coordinate revisions to MI 6.21 and AI-19 (Part IV) with site maintenance and modification organizations.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000			
IWA-4120 Additional Rules and Requirements - Repairs shall be performed in accordance with the Owner's Design Specification and Construction Code of the component or system. Later editions of the Construction Code or of Section III, either in the entirety or portions thereof, may be used. If repair welding cannot be performed in accordance with these requirements, the following may be used: (a) IWB-4000 for Class 1 components (b) IWC-4000 for Class 2 components (c) IWD-4000 for Class 3 components (d) IWE-4000 for Class MC components	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.1.3)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - (Section 5.2.1, step 2) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Section 5.2)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000 IWA-4130 Repair Program (a) Repair operations shall be performed in accordance with a program delineating essential requirements of the complete repair cycle including (1), (2), and (3) below: (1) the nondestructive examination method which revealed the flaw and the descriptions of the flaw; (2) the flaw removal method, method of measurement of the cavity created by removing the flaw, and dimensional requirements for reference points during and after the repair; (3) weld procedure and postweld heat treatment, if applicable, and nondestructive examination program to be used after the repair. (b) Prior to authorizing repairs by welding, the Owner shall conduct an evaluation of the suitability of the welding procedure(s) to be used to make the repair. The evaluation should consider cause(s) of failure to ensure that the selected repair procedure is suitable. (c) Repair programs shall be subject to review by the enforcement and regulatory authorities having jurisdiction at the plant site.	Part II, Section 2.3 dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.1.2)	PMP 1402.02 (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope, 4.1.10, 4.1.5.a, 4.1.5.c, 4.1.5.d, and 4.1.5.e)	MI 6.21, Repairs and Replacements ASME Section XI Components, Revision 8 - (5.2.1, 5.6, 5.7, 5.9, data sheet 4) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Sections 5.5, 7.1, 7.2, 7.3 and 7.4)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000			
IWA-4140 Inspection - The services of an Authorized Inspection Agency shall be used when making a weld repair. The Owner shall notify the Authorized Inspection Agency prior to starting the repair and keep the Inspector informed of the progress of the repair so that necessary inspections may be performed.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.1.2)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - (5.6, 5.7, and 5.9) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Sections 7.1, 7.2, 7.3, and 7.4)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000 IWA-4200 Material - Material shall conform to the requirements of either the original Design Sepcification or Section III.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.1.3)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Complies with intent (see written assessment) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - Complies with intent (see written assessment)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000			
IWA-4300 Welding and Welder Qualifications (Including Welding Operators) - (a) All welding shall be performed in accordance with welding procedure specifications which have been qualified by the Owner or repair organization in accordance with the requirements of Section IX and the additional requirements of Sections III and XI. (b) All welders shall be qualified by the repair organization in accordance with the requirements of Section IX and the additional requirements of Sections III and XI. (c) Welders need not be employed directly by the repair organization provided the use of such welders is controlled by the Quality Assurance Program of the repair organization. This Program shall include the following: (1) requirements for complete and exclusive administration and technical supervision of all welders by the repair organization; (2) requirements for contractual control which provides the necessary authority to assign and remove welders at the discretion of the repair organization. (3) evidence that the Quality Assurance ~~Program is acceptable to the Owner's~~ Authorized Nuclear Inservice Inspector.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Purpose, Sects. 3.1.3, 3.1.4, 3.2.4) Part II, Section 6.1, dated 10-12-84 Welding (Sections 1.0, 2.0, and 3.0)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope, Sections 4.1.5.d and 4.2.4.e.3) DPM N73M2, dated 8-28-84, Process Specifications for Welding, Heat Treatment, and Allied Field Operations	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - (Sections 5.2.4) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Section 5.5.4) Standard Practice SQM-17, General Welding Requirements for Nuclear Plants, Revision 2 - (see section on ASME IX requirements)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENT REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000 IWA-4500 Examination (a) The repaired areas shall be examined to establish a new pre-service record. The examinations shall include the method that detected the flaw. (b) If the repair includes the complete removal or isolation of the item bearing the flaw, such as heat exchanger tube plugging, (a) above shall not apply.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.1.6)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Section 4.1.10)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - (Section 5.2.1, step 7) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Section 5.3)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000 IWA-4700 Records - The records required by IWA-6000 shall be completed for all repairs.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.3.2)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Section 4.1.12)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Does not fully comply (see discussion) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - (Section 5.12)

Welding Requirements Implementation Matrix

Requirement Area: ASME Section XI Replacements, IWA-7000

Prepared By: G. J. Pitzl

Date: January 3, 1986

Requirement Area: ASME Section XI Replacements, IWA-7000

Implementation of replacement program requirements such as specifying the Code of Record, replacement procedures, nondestructive examination procedures, pressure test procedures, Authorized Inspection Agency, and records.

Assessment Summary:

With the exception of the following area of improvement, the requirement for an ASME Section XI replacement program is considered to be adequately addressed by procedures and instructions.

Area for improvement:

-- Site instructions MI 6.21 and AI-19 (Part IV) do not reference Standard Practice SQM-17, General Welding Requirements for Nuclear Plants. MI 6.21 does not adequately address consideration of applicable quality assurance records as required by IWA-7520 of ASME XI. MI 6.21 also does not give guidance on use of Data Sheet 4, Verification of Acceptability.

Recommended corrective action:

-- Division of Nuclear Services, Mechanical Branch coordinate revisions to MI 6.21 and AI-19 (Part IV) with site maintenance and modification organizations.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-7000			
IWA-7320 Welding - Welding required for the installation of a replacement shall be performed by welders who are qualified, and by using procedures that are qualified, in accordance with Section IX, and the additional heat treating and impact tests required by IWB-4000.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Sections 3.1.4 and 3.2.4)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Scope, Sections 4.1.5.d and) 4.2.4.e.3)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Does not comply fully (Section 5.2.4)
	Part II, Section 6.1, dated 10-12-84, Welding	DPM N73M2, dated 8-28-84, Process Specifications for Welding, Heat Treatment, and Allied Field Operations	AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - Partially Complies (Section 6.4.5.3) Standard Practice SQN-17, General Welding Requirements for Nuclear Plants, Revision 2 - Complies Fully

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-7000 IWA-7510 Installation of Replacements - All procedures for installation of renewal, spare, and replacement parts shall be in accordance with IWA-4100.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Complies Fully (5.1 and 5.2) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - Complies Fully (6.4)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-7000 IWA-7520 Reports and Records - (a) The following reports and records shall, to the extent required by the Construction Code and this Article, be maintained by the Owner, as applicable: (1) Certified Design Specification (2) Certified Design Report (3) Design Report (4) Overpressure Protection Report (5) Manufacturer's Data Report (6) Material Certification (7) Evaluation Report required by IWA-7220 (b) Revisions to existing reports, records, and specifications may be shown as an amendment, or as a supplement, and attached to the original record or report to provide an up-to-date record of the replacement.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Purpose)	PMP 1402.02, (SQN), dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Section 4.2.7)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Complies Partially AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - Complies Fully (Section VI)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-7000 IWA-7530 Preservice Inspection - Prior to return of the plant to service, a preservice inspection shall be made in accordance with IWB-2200, IWC-2200, IWD-2100, IWE-2200, or IWF-2200 for the component and part replaced, as applicable, including the joints that connect the replaced component or part to the system.	Part II, Section 2.3, dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Section 3.2.7)	PMP 1402.02, (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Section 4.2.3.c)	MI 6.21, Repairs and Replacements of ASME Section XI Components, Revision 8 - Complies Fully (Section 5.2.1, step 1) AI-19 (Part IV), Plant Modifications After Licensing, Revision 12 - Complies Fully (Section 6.8)

Welding Requirements Implementation Matrix

Requirement Area: ASME Section XI Pressure Tests

Prepared By: J. C. Goulart

Date: January 3, 1986

Requirement Area: ASME Section XI Pressure Tests

Applicability to the welding program:

ASME Section XI pressure test requirements following repair and replacement of components which require welding on pressure retaining boundary of the component.

Assessment Summary:

With the exception of the following areas for improvement, requirements for ASME Section XI pressure test following repair and replacement of components which require welding on pressure retaining boundary of the component are considered to be adequately implemented by procedures and instructions.

Areas for improvement:

-- Revise plant instructions (SI-250, SI-265, and TI-75) to incorporate the use of later editions and addenda of the ASME Section XI Code which add clarification on hydrostatic pressure test, also add references to other procedures used for implementation.

-- Revise DPM SEQ82E1 (Program Procedure 1502.03) to include replacements in the repairs section for TVA Safety Class A components.

Recommended corrective action:

-- Division of Nuclear Services (NUC SVCS) and Sequoyah Nuclear Plant (SQN) - In-service inspection (ISI) programs section and plant responsible sections jointly review SI-250, Reactor Coolant System Hydrostatic Pressure Test, and incorporate the following for clarification.

1. The RCS pressure 2374 psig needs to agree with DPM SEQ82E1 (Program Procedure 1502.03) pressure 2375 psig.

2. ASME Class 1 exemptions from pressure test need to be listed as in DPM SEQ82E1 (Program Procedure 1502.03).

3. Requirements for systems or portions of systems constructed entirely of austenitic steel need to be included.

4. Reference to DPM SEQ82E1 (Program Procedure 1502.03) needs to be included.

5. The objective section (1.2) needs to specify that pressure tests shall be performed following repair and replacements.

6. A holding time of 10 minutes for noninsulated systems or components needs to be specified.

7. Include that test pressure can be lowered to no less than 1800 psig and corresponding lower temperature after holding time is satisfied.

8. Specify that ASME Section XI inspection VT-2 shall be performed in accordance with Program Procedure 1502.07 (formerly DPM N80E3), Procedure N-VT-4.

9. Specify that personnel performing the visual examinations shall be certified in accordance with Program Procedure 0202.14 (formerly DPM N75C01).

10. Include in the references section; ASME Section XI, 1977 Edition, Summer 1978 Addenda and ASME Section XI, 1980 Edition, Winter 1981 Addenda.

-- NUC SVCS and SQN - ISI programs section and plant responsible sections jointly review SI-265, Hydrostatic Testing Following Repairs and Modifications, and incorporate the following for clarification.

1. The requirement section needs to include replacements.

2. Include that for systems or portions of systems not provided with safety or relief valves, the system design pressure shall be substituted for system pressure.

3. Include clarification on open-ended portions of a piping section or drain line from storage tank and portions of discharge lines in nonclosed systems.

4. Include in references; ASME Section XI, 1980 Edition, Winter 1981 Addenda.

5. Include in references; Technical Instruction TI-75.

-- NUC SVCS and SQN - ISI programs section and plant responsible sections jointly review TI-75, Hydrostatic Pressure Tests Required by ASME Section XI, and incorporate the following for clarification.

1. Specify that personnel performing the examinations be certified in accordance with Program Procedure 0202.14 (formerly DPM N75C01).

2. Include in the references section; ASME Section XI, 1980 Edition, Winter 1981 Addenda.

3. Revise the objective section to require hydrostatic pressure test after modifications, repairs, or replacements and not maintenance as stated previously.

-- NUC SVCS - ISI programs section revise DPM SEQ82E1 (Program Procedure 1502.03), ASME Section XI System Pressure Test, to include replacements in the repairs section for TVA Safety Class A components.

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50.55a(g)(4) (iv) Inservice examinations of components, tests of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (b) of this section, subject to the limitations and modifications listed in paragraph (b) of this section, and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.		PMP 1402.02 dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components SEQ82E1 (PMP 1502.03) dated 10-13-84, ASME Section XI, System Pressure Tests	MI-6.21, Revision 8, Repairs and Replacements of ASME Section XI Components SI-250, Revision 1, Reactor Coolant System Hydrostatic Pressure Test SI-265, Revision 2, Hydrostatic Testing Following Repairs and Modifications SI-75, Revision 2, Hydrostatic Pressure Tests Required by ASME Section XI

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1980 Edition, Winter 1981 Addenda of ASME Section XI, Article IWA-4000 IWA-4400 PRESSURE TEST *(a)* After repairs by welding on the pressure retaining boundary, a system hydrostatic test shall be performed in accordance with IWA-5000. *(b)* The following may be exempted from the system hydrostatic tests: *(1)* cladding repairs; *(2)* heat exchanger tube plugging; *(3)* piping, pump, and valve repairs that do not penetrate through the pressure boundary; *(4)* pressure vessel repairs where the repaired cavity does not exceed 10% of the minimum design wall thickness; *(5)* component connections, piping, and associated valves that are 1 in. nominal pipe size and smaller. Repairs made in accordance with a procedure which allows exception from post-weld heat treatment shall not be exempted.	Part II, Section 2.3 dated 4-3-85, Repairs and Replacements of ASME Section XI Components (Purpose, Sections 3.1.5 and 3.2.6)	PMP 1402.02 (SQN) dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components (Sections 4.1.4 and 4.2.4.d) SEQ82E1 (PMP 1502.03) dated 10-13-84, ASME Section XI, System Pressure Test (Sections 1.A.3, 1.B.3, and 1.C.2)	SI-250, Revision 1, Reactor Coolant System Hydrostatic Pressure SI-265, Revision 2, Hydrostatic Testing Following Repairs and Modifications TI-75, Revision 2, Hydrostatic Pressure Tests Required by ASME Section XI

Welding Requirements Implementation Matrix

Requirement Area: ASME Section XI In-Service Inspection (ISI) Program

Prepared By: J. C. Goulart

Date: January 3, 1986

Requirement Area: ASME Section XI ISI Program

Applicability to the welding program:

ASME Section XI preservice inspection (PSI) is required following the repair and replacement of components which require welding on pressure retaining boundary of the component.

Assessment Summary:

With the exception of the following area for improvement, the requirement for ASME Section XI PSI following the repair and replacement of components which require welding on pressure retaining boundary of the component is considered to be adequately implemented by procedures and instructions.

Area for improvement:

-- Reference to ASME Section XI System Pressure Test, SEQ82E1 (PMP 1502.03) would provide clarification if it was added to ASME Section XI ISI programs SI-114.1 and SI-114.2.

Recommended corrective action:

-- Division of Nuclear Services - ISI programs section revise the ASME Section XI ISI programs to reference the ASME Section XI system pressure test procedure, SEQ82E1 (PMP 1502.03).

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WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50.55a(g) In-service Inspection Requirements: (1) For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971, components (including supports) shall meet the requirements of paragraphs (g)(4) and (g)(5) of this section to the extent practical. Components which are part of the reactor coolant pressure boundary[3] and their supports shall meet the requirements applicable to components which are classified as ASME Code Class 1. Other safety-related pressure vessels, piping, pumps and valves shall meet the requirements applicable to components which are classified as ASME Code Class 2 or Class 3.	Part II, Section dated 10-12-84, In-service Inspection (see Section/1.1.1)		SI 114.1, Revision 6, ASME Section XI Inservice Inspection Program, Unit 1 SI 114.2, Revision 6, In-service Inspection Program for Tennessee Valley Authority Sequoyah Nuclear Plant Unit 2 Only
	Part II, Section 5.1 dated 10-12-84, In-service Inspection (Section 1.3.4 reference in accordance with Part II, Section 2.3, Repair and Replacement of ASME XI Components)	PMP 1402.02 dated 3-20-85, Preparation of Work Instructions for Repairs and Replacements of ASME Section XI Components	MI-6.21, Revision 8, Repairs and Replacements of ASME Section XI Components
(4) Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2 and Class 3 shall meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions of the ASME Boiler and Pressure Vessel Code and Addenda that become effective subsequent to editions specified in paragraphs (g)(2) and (g)(3) of this section and are incorporated by reference in paragraph (b) of this section, to the extent practical within the limitations of design, geometry and materials of construction of the components.	Part II, Section 5.1 dated 10-12-84, In-service Inspection (Section 2.0)	SEQ82E1 (PMP 1502.03) dated 10-13-84 (ASME Section XI, System Pressure Test)	SI-250, Revision 1, Reactor Coolant System Hydrostatic Pressure Test SI-265, Revision 2, Hydrostatic Testing Following Repairs and Modifications TI-75, Revision 2, Hydrostatic Pressure Tests Required by ASME Section XI

CONTINUED ON NEXT PAGE

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50.55a(g) (CONTINUED) (i) Inservice examinations of components, inservice tests to verify operational readiness of pumps and valves whose function is required for safety, and system pressure tests, conducted during the initial 120-month inspection interval shall comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section on the date 12 months prior to the date of issuance of the operating license, subject to the limitations and modifications listed in paragraph (b) of this section.	Part II, Section 5.1 dated 10-12-84, In-service Inspection (Section 1.2.1.d references in accordance with Part II, Section 6.3, dated 3-26-85 Nondestructive Examination)	PMP 1502.07 dated 1-18-85, Nondestructive Examination Procedures Approved for Use on CSSC Items at All Nuclear Plants (Section 3.1.1)	TI-51, Revision 29, Assignment of Detailed Test Methods and Responsibility for Nondestructive Testing
	Part II, Section 5.1 dated 10-12-84, In-service Inspection (Section 1.2.5 references in accordance with PMP 1502.02 Qualification and Certification Program for Nondestructive Examination Personnel)	PMP 0202.14 dated 3-6-1985 (formerly PMP 1502.02) Qualification and Certification Program for Nondestructive Examination Personnel	AI-20, Revision 10, Inspection Program (Section 5.2)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50.55a(g)(6) (ii) The Commission may require the licensee to follow an augmented inservice inspection program for systems and components for which the Commission deems that added assurance of structural reliability is necessary.			SI-114.1, Revision 6, ASME Section XI In-service Inspection Program, Unit 1 (Pressurizer Relief Line per Technical Specifications 4.0.5 and 4.4.3.2,4, RPV Nozzle Cladding per Technical Specifications 4.4.10, RPV Closure Head Circumferential Weld (W09-10) per Code Case N-209, RPV Nozzle Safe Ends per Final Report Sequoyah Nuclear Plant - Evaluation of Cracking in Reactor Vessel Nozzle Stainless Steel Buttering) SI-114.2, Revision 6, In-service Inspection Program for Tennessee Valley Authority Sequoyah Nuclear Plant Unit 2 Only (RPV Nozzle Safe Ends per Final Report Sequoyah Nuclear Plant - Evaluation of Cracking in Reactor Vessel Nozzle Stainless Steel Buttering, RPV Nozzle Cladding per Technical Specification 4.4.10)

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
10 CFR 50.55a(g)(5) (iii) If the licensee has determined that conformance with certain code requirements is impractical for his facility, the licensee shall notify the Commission and submit information to support his determinations. (iv) Where an examination or test requirement by the code or addenda is determined to be impractical by the licensee and is not included in the revised inservice inspection program as permitted by paragraph (g)(4) of this section, the basis for this determination shall be demonstrated to the satisfaction of the Commission not later than 12 months after the expiration of the initial 120-month period of operation from start of facility commercial operation and each subsequent 120-month period of operation during which the examination or test is determined to be impractical.	Part II, Section 5.1 dated 10-12-84, In-service Inspection (Section 4.0)		SI-114.1, Revision 6, ASME Section XI In-service Inspection Program, Unit 1 (Section on Request for Relief) SI-114.2, Revision 6, In-service Inspection Program for Tennessee Valley Authority Sequoyah Nuclear Plant Unit 2 Only (Section on Request for Relief) Letter to J. P. O'Reilly, NRC, from L. M. Mills, TVA, dated 8-18-83 (A27 830818 001), In-service System Pressure Test Program for First 10-Year Interval

Welding Requirements Implementation Matrix

Requirement Area: ASME Code Section IX

Prepared By: R. L. Lahti

Date: January 3, 1986

Requirement Area: ASME Code Section IX

Applicability to the welding program:

ASME Code Section XI requires that, as a minimum, the original Code requirements are met.

Assessment Summary:

DPM N73M2 is the primary weld program specification and fully complies with the requirements of ASME Code Section IX.

SQM 17, "General Welding Requirements for Nuclear Plants," implements DPM N73M2 without exception at Sequoyah Nuclear Plant and other site procedures add administrative details to facilitate its implementation.

Area for improvement: None

Recommended corrective action: None

GJP:JLR
01/27/86
A1GJP5.JR

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Current Edition and Addenda of ASME IX (Per ASME XI, IWA-4100)		DPM N73M2, Rev. 12-20-85 which includes the following process specifications:	Standard Practice SQM 17, R2 states, "All welding on CSSC shall comply with DPM N73M2."
Article I, Part QW Welding General Requirements		1.M.1.2(R 3) and 1.M.2.2(R 2)	
Article II, Welding Procedure Qualifications	Part II, 6.1, Welding, 10-12-84	1.M.1.2(R 3)	
Control of Heat Treatment	Part II, 6.2, Heat Treatment, 10-12-84	Applicable Process Specifications	M&AI-1, R9 (Welding Documentation and Heat Treatment)
Weld Documentation	Part II, 6.1, Welding, 10-12-84	Supplement C	M&AI-1
Article III, Welding Performance Qualifications	Part II, 6.1, Welding, 10-12-84	1.M.2.2(R 2) and Supplement A	
Welder Continuity	Part II, 6.1, Welding, 10-12-84	1.M.2.2(R 2) and Supplement B	
Material Specification		Supplement C and DPM N76A10, Appendix 3; WMS-1016 Rev. 6	SQA 162, R1 (Purchase Specs)

Welding Requirements Implementation Matrix

Requirement Area: AWS Structural Welding Code - Steel

Prepared By: R. L. Lahti

Date: January 27, 1986

Requirement Area: AWS Structural Welding Code - Steel

Applicability to the welding program:

As permitted by ASME Code Section XI, AWS D1.1 is used for repairs and replacements of structural items.

Assessment Summary:

- DPM N73M2 complies fully with the requirements specified by G-29C. The FSAR committed to meeting AWS D1.1 "as modified by G-29C." AWS D1.1 and G-29C are currently being evaluated by the Office of Engineering.

Area for improvement: None

Recommended corrective action: None

GJP:JLR
01/28/86
A1GJP5.JR

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
1972 Edition of the AWS Structural Welding Code - Steel D1.1 FSAR 3.8.1.2 "as modified by G-29C"	Part II, 6.1, Welding, 10-12-84	DPM N73M2 which includes the following process specifications:	Standard Practice SQM 17, R2 states, "All welding on CSSC shall comply with DPM N73M2."
Item 1 General Provisions		1.C.1.2(R 2)	
Part 2 General Requirements		P.S.1.C.1.2(R 2)	
Part B Procedure Qualifications		P.S.1.C.1.2(R 2)	
Part C Welder Qualifications		P.S.1.C.2.2(R 1)	
Part D Welder Operator Qualifications		P.S.1.C.2.2(R 1)	
Welder Continuity Part C, Paragraph 5.30		P.S.1.C.2.2(R 1)	
Welding Material Control Part A General		P.S.1-M-3.1 (R 7)	SQA 45, R18 (Quality Control of Material, Parts, and Services) AI-36, R8 (Storage, Handling and Shipping of QA Material)
4.1 Filler Metal Requirements		DPM N76A10 Appendix 3	M&AI-5, R8 (Welding Material Control) AI-11, R34 (Receipt Inspection) SQA 162, R1 (Purchase Specs)

Welding Requirements Implementation Matrix

Requirement Area: Regulatory Guide 1.31, "Control of Ferrite Content in Stainless Steel Weld Metal"

Prepared By: R. L. Lahti

Date: January 3, 1986

Requirement Area: Regulatory Guide 1.31, "Control of Ferrite Content in Stainless Steel Weld Metal"

Applicability to the welding program:

Applies to the control of ferrite content in austenitic stainless steel welds when greater than 5 ferrite number (FN) to avoid microfissuring and less than 20 FN to offset dilution.

Assessment Summary:

The references to Regulatory Guide 1.31 in the FSAR were supplemented by related statements such as:

Paragraph 6.1.1 - "All (austenitic) weld filler metal was of select composition to produce welds of at least 5% delta ferrite. Tests were made in accordance with Section III to assure that adequate delta ferrite levels were met."

Paragraph 5.2.5.7 - "Control of Delta Ferrite, All austenitic stainless steel welding materials procured since February, 1976 contain a minimum of 5% delta ferrite.

The delta ferrite content of all production welds is determined to ensure that the welds contain a minimum of 3% delta ferrite. The delta ferrite content is determined on all welds over one inch thick. A statistical sampling plan is used to verify the delta ferrite content of all other welds except single pass welds, welds less than 1/4 inch thick or fillet welds with a throat of 3/8 inch or less.

If a weld is shown to contain less than 3% delta ferrite, it is either removed or sampled metallographically."

The above statements addressed compliance with the initial issue of Regulatory Guide 1.31 for the purpose of constructing the plant. Revision 3 of the Regulatory Guide has refined and simplified the concern to a matter of adding ferrite controls in the procurement of austenitic stainless steel filler materials. Nuclear Operations fully complies with Regulatory Guide 1.31, Revision 3 requirements as implemented by DPM N76A10 and at Sequoyah Nuclear Plant, SQA 162.

Area for improvement: None

Recommended corrective action: None

GJP:JLR
Attachments
01/28/86
A1GJP5.JR

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Regulatory Guide 1.31 referenced by FSAR, paragraphs 3.8.12 and 3.8.4.2	Part II, 6.1, Welding, 10-12-84	DPM N76A10	SQA 162, R1 (Purchase Specs)

Welding Requirements Implementation Matrix

Requirement Area: Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel"

Prepared By: R. L. Lahti

Date: January 3, 1986

Requirement Area: Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel"

Applicability to the welding program:

Applies to process and contamination controls during all stages of construction, repair, and replacement in austenitic stainless steel systems to mitigate the possibility of stress corrosion cracking.

Assessment Summary:

The welding program fully complies with Regulatory Guide 1.44.

Weld process specifications control weld travel speed, interpass temperature, amperage, size of electrode, and bead width minimizing the heat input. Post weld heat treatment is not performed after repair or replacement of stainless steel materials. These processes minimize the heat input and sensitization during welding.

The materials which could contact stainless steel during fabrication are controlled by procedures and instructions.

GJP:JLR
01/27/86
A1GJP5.JR

WELDING REQUIREMENTS IMPLEMENTATION MATRIX

PLANT Sequoyah

Date 1-3-86

SOURCE DOCUMENTS/REQUIREMENTS	IMPLEMENTING DOCUMENTS		
	NQAM	DPM/ PROGRAM PROCEDURE	PLANT STANDARD PRACTICE/ ADMINISTRATIVE INSTRUCTION
Regulatory Guide 1.44, May 1973 Safety Evaluation Report, Paragraph 6.1.1	Part II, 6.1 Welding, 10-12-84		
Control of Material Composition - Ferrite Content		DPM N76A10, Appendix 3	SQA 162, R1 (Purchase Specs)
Contamination Control During Welding		DPM N73M2 PS 4.M.1.1(R 9)	Standard Practice SQM 17, R2 (Welding Requirements)
Control of Heat Input, Interpass Temperature, and Welding Techniques		Process Specifications Applicable to Welding Stainless Steel	
Intergranular Corrosion Test Such r ASTM A262 Practice A or E for Welding Stainless Steel With Greater Than 0.03 Percent Carbon		None	None

VOLUME 2

TVA WELDING PROJECT
SEQUOYAH PHASE I REVIEW

6.0 FIGURES

WELDING PROJECT FUNCTIONAL ORGANIZATION

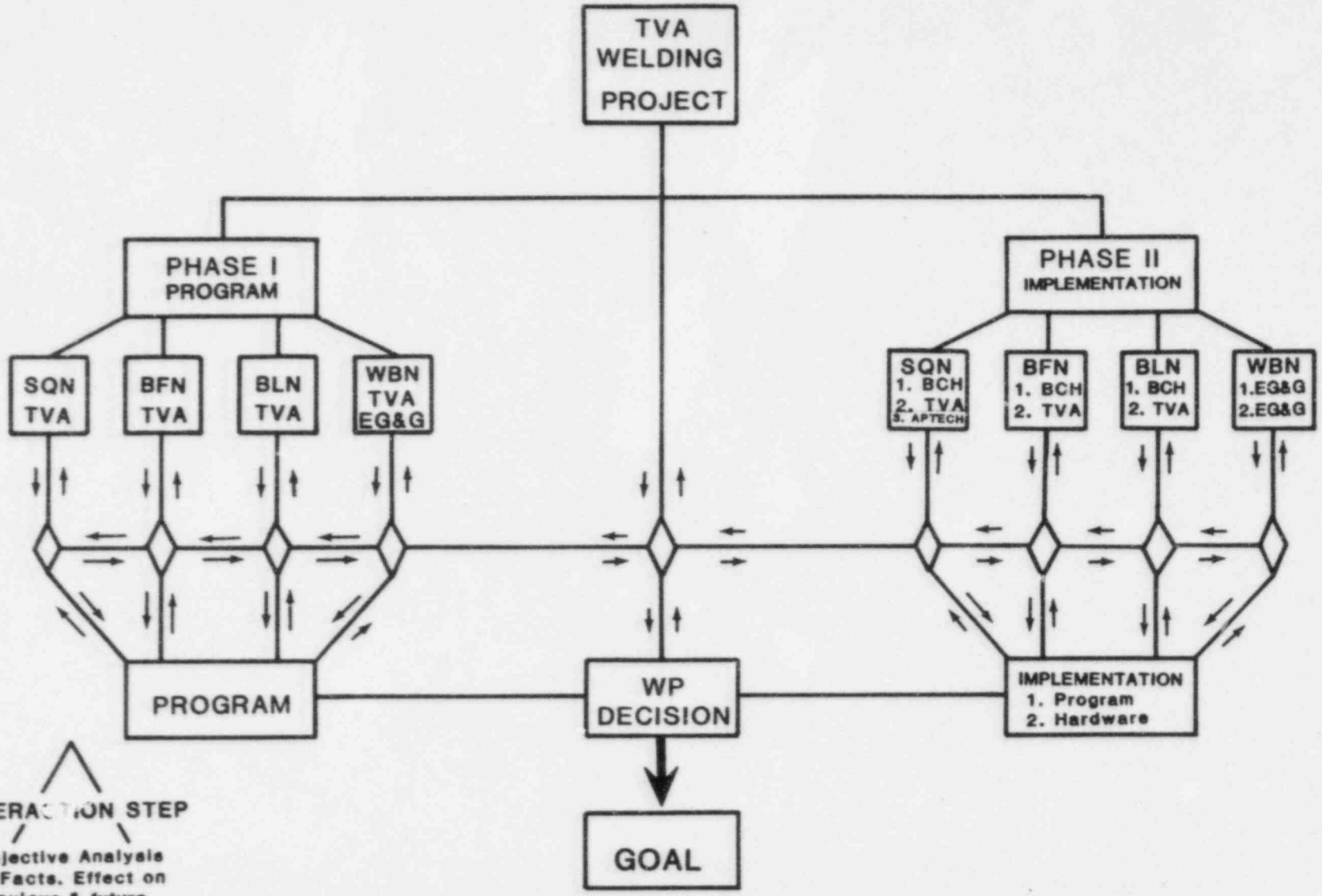


FIGURE 1

INTERACTION STEP

Objective Analysis of Facts. Effect on previous & future objectives & decisions. Includes QTC & TVA Employee Concerns Program Input

GOAL ➧ Program = Commitment = As Built / Implementation

WELDING PROJECT CHARTER

EXAMINE THE ORGANIZATIONAL WELDING PROGRAMS IN TVA, DETERMINE ANY REMEDIAL ACTIONS THAT MAY BE NEEDED, AND TAKE THOSE ACTIONS NECESSARY TO ASSURE THAT FUTURE TVA PERFORMED WELDING ACTIVITIES ARE IN ACCORD WITH TVA'S COMMITMENT TO EXCELLENCE IN ITS NUCLEAR PROGRAM.

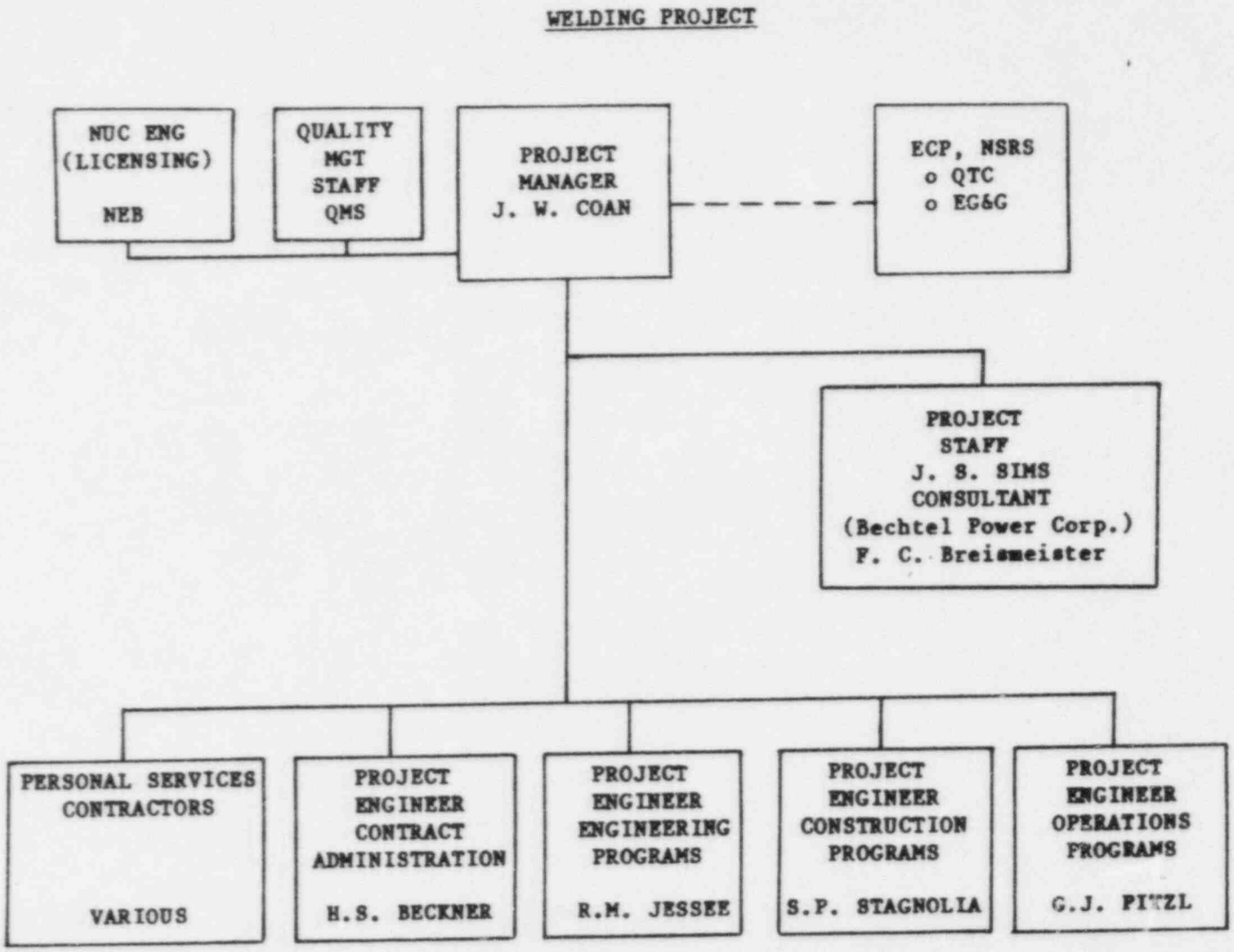
VERIFY THAT THE TVA PERFORMED WELDING OF STRUCTURES, PIPING SYSTEMS, AND OTHER SAFETY-RELATED PLANT COMPONENTS, WHICH ARE CURRENTLY IN PLACE AT TVA'S NUCLEAR PLANTS ARE ADEQUATE TO MEET TVA, CODE, AND REGULATORY REQUIREMENTS.

THE PRIORITY WILL BE AS FOLLOWS:

1. SEQUOYAH
2. WATTS BAR
3. BROWNS FERRY
4. BELLEFONTE

FIGURE 2

095340.06



095340.02

Figure 3 - Project Organization

ORGANIZATIONAL INTERFACES & FLOWCHART
WELDING PROJECT & E.G. & G. - IDAHO AT WBN

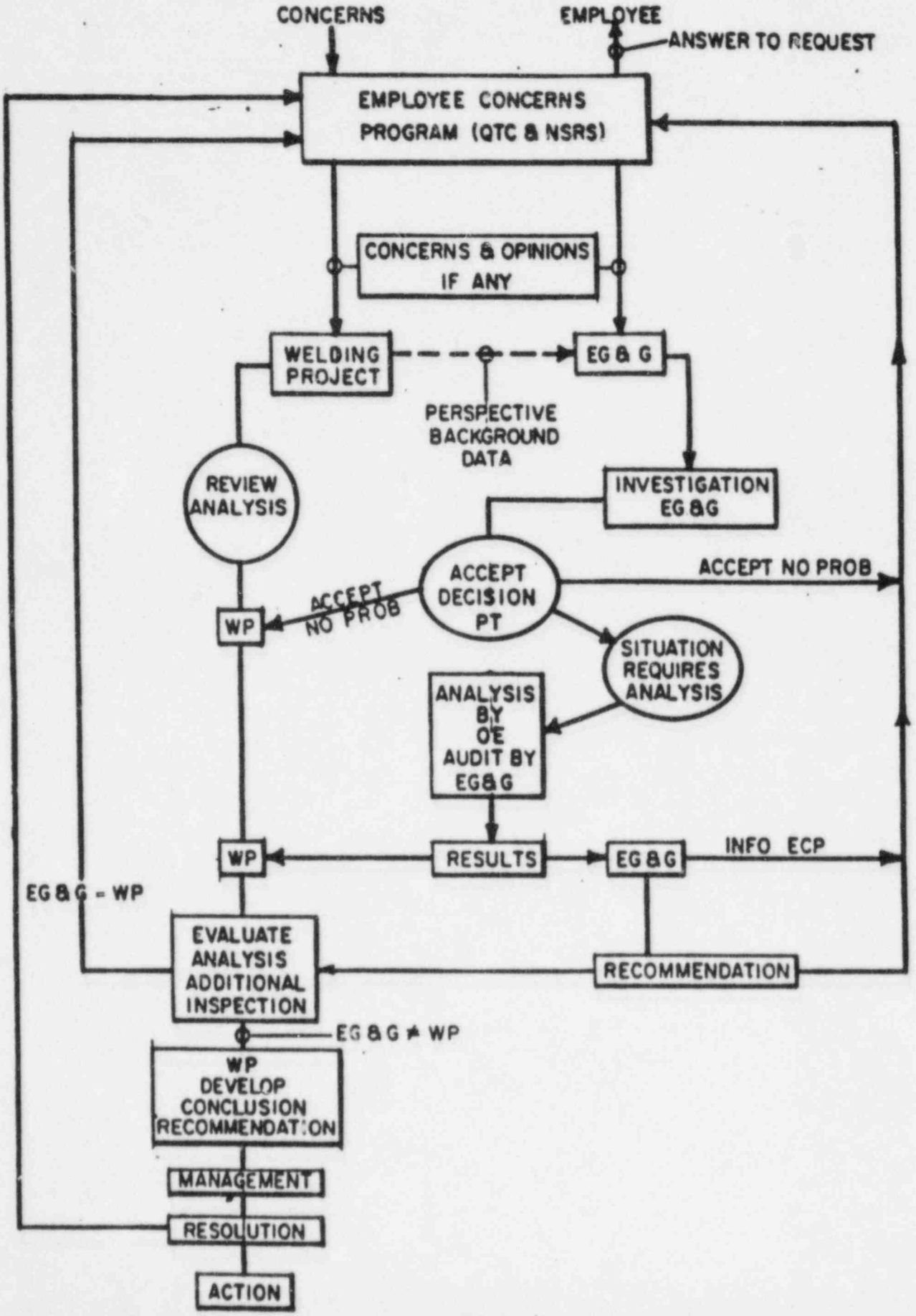


Figure 4

PURPOSE

PHASE I

THE PRIMARY PURPOSES OF PHASE I ARE TO ENSURE THAT THE TVA PROGRAM, DESIGN DOCUMENTS, POLICIES AND PROCEDURES CORRECTLY REFLECT TVA COMMITMENTS AND REGULATORY REQUIREMENTS AND TO IDENTIFY AND CATEGORIZE CONCERNS/ DEFICIENCIES IN THE WELDING PROGRAM.

PHASE II

THE PRIMARY PURPOSES OF PHASE II ARE TO:

- EVALUATE THE IMPLEMENTATION OF PROCEDURES
- VERIFY THAT INSTALLED WELDMENTS MEET REQUIREMENTS OR ARE ADEQUATE FOR SERVICE
- CORRECT ANY PROBLEMS, IMPLEMENT CHANGES TO PREVENT RECURRENCE

FIGURE 5 - PURPOSES PHASE I AND PHASE II

ACTION PLAN

PHASE I

1. REVIEW TVA COMMITMENTS TO NRC
2. VERIFY THAT WRITTEN PROGRAM REFLECTS COMMITMENTS
3. ASSEMBLE QUALITY INDICATORS OF "WELDING CONCERNS" BY TYPE AND PLANT
4. TREND AND EVALUATE EFFECT OF "QUALITY INDICATORS" ON PROGRAMS
5. ISSUE ADEQUACY STATEMENT REGARDING WRITTEN PROGRAMS TO IMPLEMENT/ CONTROL WELDING

PHASE II

1. PERFORM WELDING PROGRAM IMPLEMENTATION AUDIT
   - CONSTRUCTION PROGRAM IMPLEMENTATION
   - OPERATIONS PROGRAM IMPLEMENTATION
2. EVALUATE NEED FOR ADDITIONAL REINSPECTIONS
3. IMPLEMENT ANY ADDITIONAL REINSPECTIONS AND DEFICIENCY RESOLUTIONS (BOTH INDIVIDUAL AND GENERIC CASES)
4. WELDING PROJECT WILL ISSUE FINAL REPORTS, EACH PLANT

FIGURE 6 - ACTION PLAN

096002.02

REINSPECTION ACCEPTANCE CRITERIA

TYPE COMPONENT		CRITERIA
STRUCTURAL STEEL		NCIG-01
SUPPORT STEEL	NON-ASME STAMPED	NCIG-01
SUPPORT STEEL	ASME NF STAMPED	ASME III, NF AND CODE CASES
ASME PIPING		ASME III *
ANSI B31.7		ANSI B31.7 *
ANSI B31.1		ANSI B31.1
ASME SECTION XI PIPE AND SUPPORTS		ASME XI

* ASME SECTION XI MAY BE USED FOR SYSTEMS WHICH HAVE BEEN HYDRO TESTED AND STAMPED ON A CASE BASIS. ASME SECTION XI IS THE APPROPRIATE CODE FOR SUCH WORK.

FIGURE 7

095361.01