EMPLOYEE CONCERNS

SPECIAL PROGRAM

VOLUME 4
MATERIAL CONTROL CATEGORY

SUBCATEGORY REPORT 40500
MATERIAL IDENTIFICATION

UPDATED

TVA

NUCLEAR POWER

TVA EMPLOYEE CONCERNS
SPECIAL PROGRAM

REPORT NUMBER: 40500

REPORT TYPE: Material Control Subcategory (Final)

REVISION NUMBER: 3

TITLE: Material Identification 40500

REASON FOR REVISION: Initial

Revision 1: Revised to incorporate Senior Review Panel, and Nuclear Regulatory Commission comments, and Corrective Action Plans.

Revision 2: Revised to incorporate Senior Review Panel comments and Corrective Action Plans.

Revision 3: Revised to incorporate Senior Review Panel comments and Corrective Action Plans.

PREPARATION

PREPARED BY: Fredrick K. Smith — SIGNATURE — 9-3-87 DATE

REVIEWS

PEER: Charles W. Hutzler — SIGNATURE — 9-4-87 DATE

TAS: James E Wardlaw III — SIGNATURE — 9/8/87 DATE

9/4/87

CONCURRENCES

Joseph K. Singer	9/11/87		
CEG-B: Frank J. Howard	9-4-87		
SRP: Jimmie N. Joyce	9-15-87		
SIGNATURE	DATE	SIGNATURE	DATE

APPROVED BY:

James R Russell — ECSP MANAGER — 9-8-87 DATE

1132T

Preface, Glossary, and List of Acronyms
for ECTG Subcategory Reports

HISTORY OF REVISION

REV NUMBER	PAGES REVISED	REASON FOR CURRENT REVISION
3	i	To clarify that one or more attachments will help the reader find where a particular concern is evaluated

Preface

This subcategory report is one of a series of reports prepared for the Employee Concerns Special Program (ECSP) of the Tennessee Valley Authority (TVA). The ECSP and the organization which carried out the program, the Employee Concerns Task Group (ECTG), were established by TVA's Manager of Nuclear Power to evaluate and report on those Office of Nuclear Power (ONP) employee concerns filed before February 1, 1986. Concerns filed after that date are handled by the ongoing ONP Employee Concerns Program (ECP).

The ECSP addressed over 5800 employee concerns. Each of the concerns was a formal, written description of a circumstance or circumstances that an employee thought was unsafe, unjust, inefficient, or inappropriate. The mission of the Employee Concerns Special Program was to thoroughly investigate all issues presented in the concerns and to report the results of those investigations in a form accessible to ONP employees, the NRC, and the general public. The results of these investigations are communicated by four levels of ECSP reports: element, subcategory, category, and final.

Element reports, the lowest reporting level, will be published only for those concerns directly affecting the restart of Sequoyah Nuclear Plant's reactor unit 2. An element consists of one or more closely related issues. An issue is a potential problem identified by ECTG during the evaluation process as having been raised in one or more concerns. For efficient handling, what appeared to be similar concerns were grouped into elements early in the program, but issue definitions emerged from the evaluation process itself. Consequently, some elements did include only one issue, but often the ECTG evaluation found more than one issue per element.

Subcategory reports summarize the evaluation of a number of elements. However, the subcategory report does more than collect element level evaluations. The subcategory level overview of element findings leads to an integration of information that cannot take place at the element level. This integration of information reveals the extent to which problems overlap more than one element and will therefore require corrective action for underlying causes not fully apparent at the element level.

To make the subcategory reports easier to understand, three items have been placed at the front of each report: a preface, a glossary of the terminology unique to ECSP reports, and a list of acronyms.

Additionally, at the end of each subcategory report will be a Subcategory Summary Table that includes the concern numbers; identifies other subcategories that share a concern; designates nuclear safety-related, safety significant, or non-safety related concerns; designates generic applicability; and briefly states each concern.

Either the Subcategory Summary Table or another attachment or a combination of the two will enable the reader to find the report section or sections in which the issue raised by the concern is evaluated.

The subcategories are themselves summarized in a series of eight category reports. Each category report reviews the major findings and collective significance of the subcategory reports in one of the following areas:

- management and personnel relations
- industrial safety
- construction
- material control
- operations
- quality assurance/quality control
- welding
- engineering

A separate report on employee concerns dealing with specific contentions of intimidation, harassment, and wrongdoing will be released by the TVA Office of the Inspector General.

Just as the subcategory reports integrate the information collected at the element level, the category reports integrate the information assembled in all the subcategory reports within the category, addressing particularly the underlying causes of those problems that run across more than one subcategory.

A final report will integrate and assess the information collected by all of the lower level reports prepared for the ECSP, including the Inspector General's report.

For more detail on the methods by which ECTG employee concerns were evaluated and reported, consult the Tennessee Valley Authority Employee Concerns Task Group Program Manual. The Manual spells out the program's objectives, scope, organization, and responsibilities. It also specifies the procedures that were followed in the investigation, reporting, and closeout of the issues raised by employee concerns.

ECSP GLOSSARY OF REPORT TERMS*

classification of evaluated issues the evaluation of an issue leads to one of the following determinations:

Class A: Issue cannot be verified as factual

Class B: Issue is factually accurate, but what is described is not a problem (i.e., not a condition requiring corrective action)

Class C: Issue is factual and identifies a problem, but corrective action for the problem was initiated before the evaluation of the issue was undertaken

Class D: Issue is factual and presents a problem for which corrective action has been, or is being, taken as a result of an evaluation

Class E: A problem, requiring corrective action, which was not identified by an employee concern, but was revealed during the ECTG evaluation of an issue raised by an employee concern.

collective significance an analysis which determines the importance and consequences of the findings in a particular ECSP report by putting those findings in the proper perspective.

concern (see "employee concern")

corrective action steps taken to fix specific deficiencies or discrepancies revealed by a negative finding and, when necessary, to correct causes in order to prevent recurrence.

criterion (plural: criteria) a basis for defining a performance, behavior, or quality which ONP imposes on itself (see also "requirement").

element or element report an optional level of ECSP report, below the subcategory level, that deals with one or more issues.

employee concern a formal, written description of a circumstance or circumstances that an employee thinks unsafe, unjust, inefficient or inappropriate; usually documented on a K-form or a form equivalent to the K-form.

evaluator(s) the individual(s) assigned the responsibility to assess a specific grouping of employee concerns.

findings includes both statements of fact and the judgments made about those facts during the evaluation process; negative findings require corrective action.

issue a potential problem, as interpreted by the ECTG during the evaluation process, raised in one or more concerns.

K-form (see "employee concern")

requirement a standard of performance, behavior, or quality on which an evaluation judgment or decision may be based.

root cause the underlying reason for a problem.

*Terms essential to the program but which require detailed definition have been defined in the ECTG Procedure Manual (e.g., generic, specific, nuclear safety-related, unreviewed safety-significant question).

Acronyms

AI	Administrative Instruction
AISC	American Institute of Steel Construction
ALARA	As Low As Reasonably Achievable
ANS	American Nuclear Society
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
BFN	Browns Ferry Nuclear Plant
BLN	Bellefonte Nuclear Plant
CAQ	Condition Adverse to Quality
CAR	Corrective Action Report
CATD	Corrective Action Tracking Document
CCTS	Corporate Commitment Tracking System
CEG-H	Category Evaluation Group Head
CFR	Code of Federal Regulations
CI	Concerned Individual
CMTR	Certified Material Test Report
COC	Certificate of Conformance/Compliance
DCR	Design Change Request
DNC	Division of Nuclear Construction (see also NU CON)

DNE	Division of Nuclear Engineering
DNQA	Division of Nuclear Quality Assurance
DNT	Division of Nuclear Training
DOE	Department of Energy
DPO	Division Personnel Officer
DR	Discrepancy Report or Deviation Report
ECN	Engineering Change Notice
ECP	Employee Concerns Program
ECP-SR	Employee Concerns Program-Site Representative
ECSP	Employee Concerns Special Program
ECTG	Employee Concerns Task Group
EEOC	Equal Employment Opportunity Commission
EQ	Environmental Qualification
EMRT	Emergency Medical Response Team
EN DES	Engineering Design
ERT	Employee Response Team or Emergency Response Team
FCR	Field Change Request
FSAR	Final Safety Analysis Report
FY	Fiscal Year
GET	General Employee Training
HCI	Hazard Control Instruction
HVAC	Heating, Ventilating, Air Conditioning
II	Installation Instruction
INPO	Institute of Nuclear Power Operations
IRN	Inspection Rejection Notice

L/R	Labor Relations Staff
M&AI	Modifications and Additions Instruction
MI	Maintenance Instruction
MSPB	Merit Systems Protection Board
MT	Magnetic Particle Testing
NCR	Nonconforming Condition Report
NDE	Nondestructive Examination
NPP	Nuclear Performance Plan
NPS	Non-plant Specific or Nuclear Procedures System
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
NSB	Nuclear Services Branch
NSRS	Nuclear Safety Review Staff
NU CON	Division of Nuclear Construction (obsolete abbreviation, see DNC)
NUMARC	Nuclear Utility Management and Resources Committee
OSHA	Occupational Safety and Health Administration (or Act)
ONP	Office of Nuclear Power
OWCP	Office of Workers Compensation Program
PHR	Personal History Record
PT	Liquid Penetrant Testing
QA	Quality Assurance
QAP	Quality Assurance Procedures
QC	Quality Control
QCI	Quality Control Instruction

QCP	Quality Control Procedure
QTC	Quality Technology Company
RIF	Reduction in Force
RT	Radiographic Testing
SQN	Sequoyah Nuclear Plant
SI	Surveillance Instruction
SOP	Standard Operating Procedure
SRP	Senior Review Panel
SWEC	Stone and Webster Engineering Corporation
TAS	Technical Assistance Staff
T&L	Trades and Labor
TVA	Tennessee Valley Authority
TVTLC	Tennessee Valley Trades and Labor Council
UT	Ultrasonic Testing
VT	Visual Testing
WBECSP	Watts Bar Employee Concern Special Program
WBN	Watts Bar Nuclear Plant
WR	Work Request or Work Rules
WP	Workplans

EXECUTIVE SUMMARY

MATERIAL CONTROL CATEGORY
SUBCATEGORY REPORT 40500 "MATERIAL IDENTIFICATION"

Summary of Issues

There are eighteen concerns in this subcategory. The eighteen concerns were grouped into fifteen issues to facilitate effective evaluation of similar concerns. These issues addressed (1) adequacy of marking and storage of ASTM A-307 bolting material; (2) unapproved paint markers used on stainless steel; (3) uncontrolled removal and replacement of valve identification tags; (4) no heat numbers on structural steel; (5) no heat numbers and data on tube steel for hangers; (6) ERCW buried pipe does not have heat numbers stamped on pipe; (7) inadequate storage, issuance and traceability of small code items; (8) heat numbers missing or cut off stainless steel pipe; (9) traceability treated differently for DNE/DNC Level I and II materials; (10) requisitions being altered; (11) no heat numbers on HVAC duct supports; (12) heat numbers placed on plates attached to the containment vessel without QA's knowledge; (13) loss of material identification after receipt inspection; (14) no identification of Q material during storage; and (15) heat number on one end of black pipe is cut off when pipe is cut up. One of the issues was determined to present an isolated problem in the form of a side issue at SQN, while two of the issues were determined to present a current problem at WBN during the evaluation.

Major Findings

1. Unapproved paint marking materials were used on austenitic stainless steel at WBN. This resulted from inadequate training and communication, inattention to procedural detail by users, and lack of management oversight.

2. Improper identification, and storage and segregation of small code items in field storage was not sufficient to maintain traceability at WBN. This resulted from management's failure to recognize the need for maintaining positive identification and segregation in field storage.

Collective Significance of Major Findings

1. Due to the inadequate training of personnel responsible for the procurement and use of temporary markers, inattention to procedural detail by the users of temporary markers, inadequate communications between craft personnel and line management regarding the use of approved/certified markers, and management's unawareness as to approved/certified markers to be used on stainless steel, various unapproved markers have been utilized on stainless steel features, primarily in the unit 2 Reactor Building. Chemical properties of unapproved markers could have a detrimental effect on stainless steel items. This effect may not be readily evident, and may only become apparent after a long elapsed time resulting in degradation of safety-related piping systems. This issue was site-specific to WBN.

2. Due to a failure by management to recognize the procedural needs for storing and controlling/segregating small code items to maintain traceability, these items were being maintained in a field storage area such that traceability was lost. This was a WBN site-specific issue applicable to 3/4-inch diameter and smaller code items. Without this traceability/segregation, certain QA aspects of the material are indeterminate. Therefore, compliance to code requirements is indeterminate. The impact on the safety of the plant, however, should be minimal.

Causes of the Major Findings

1. Inadequate training, inattention to procedural detail, inadequate communications, and management unawareness to upper-tier requirements all contributed to the use of unapproved paint markers on stainless steel.

2. Failure by management to recognize the need for a procedure controlling and segregating small code items in the field to maintain traceability lead to the improper storage and control of these items in one field storage location.

Corrective Action on Major Findings

1. NCRs 6821 and 6870 have been issued to document and track corrective action for this issue. All unapproved markers will be collected and turned in to the warehouse for disposal. Site procedure WBN-QCI-1.20 will be revised to allow only the procurement of certified white markers. Applicable personnel will be trained/retrained concerning the requirements of markings placed on stainless steel. All temporary markings from unapproved markers on stainless steel will be removed in accordance with the subject NCRs. Reference CATD 40500-WBN-1.

2. NCR 6834 has been issued to document and track corrective action for this issue. The field storage area in question has been locked. Material in this facility will be evaluated and dispositioned by the future site material control program being developed under corporate guidance of memorandum R00 870210 910. Where required, DNE will determine acceptability for use for pressure boundary material supplied by vendors on non-QA contracts, and acceptability of materials not certified for use in ASME systems but installed in such. Reference CATD 40500-WBN-2.

EXECUTIVE SUMMARY
SUBCATEGORY 40500
SUMMARY TABLE

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
ASTM A-307-Bolts	X		This WBN issue was factual, but not a problem. Storage and marking of ASTM A-307 bolting material in the warehouse and field storage areas were adequate. Testing of unmarked bolts was accomplished and appropriate corrective action taken prior to this evaluation at WBN.	N/A	None	N/A	There was no overall collective significance identified with respect to management or employee effectiveness or technical adequacy for the subcategory. The significance of the issues requiring correction in accordance with the CATDs is the indeterminacy of the items to perform their designed/intended function.
Austenitic Stainless Steel	X		This WBN issue was determined to be factual and a problem. Unapproved paint markers were used on stainless steel at WBN. NCRs 6821 and 6870 have been issued. Ref. CATD # 40500-WBN-1.	Inadequate training, inattention to procedural detail, inadequate communications, and management unawareness.	Unapproved markers will be collected and disposed of. Site procedure will be revised to allow only purchasing of approved markers. Personnel using markers will be trained/retrained. All temporary unapproved markings will be removed from stainless steel component that operate at temperatures above 200°F	Chemical properties of unapproved markers could have a detrimental effect on stainless steel. This effect may not be readily evident, and may only become apparent after a long elapsed time.	

EXECUTIVE SUMMARY
SUBCATEGORY 40500
SUMMARY TABLE

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
Valves (Test 70)	X		The issue was factual but not a problem at WBN. It was not factual at SQN. Procedures are in place at BLN and WBN to ensure that correct valves are installed, even if paper/metal tag gets removed and wrong tag is put back on. Procedures at SQN do not utilize valve mark numbers to identify valves at installation. Therefore, no problems were determined.	N/A	None	N/A	
Structural Steel	X		This issue was factual, but not a problem. Structural steel was found at BLN and WBN not to have heat/code number stenciled on it. Adequate procedures were in place at both sites to maintain traceability to issue. After issue from the warehouse, the lack of heat/code number would restrict use of steel to, Level II & Non-QA use only but not totally eliminate usability. This is more of an economic issue than a QA issue.	N/A	None	N/A	

EXECUTIVE SUMMARY
SUBCATEGORY 40500
SUMMARY TABLE

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
Tube Steel	X		This WBN issue was determined to be factual, but not a problem. At WBN, it was found that adequate procedures are in place to maintain heat number traceability through issuance from the warehouse. After this point, heat number traceability is only required for QA Level I. Hangers, with a few exceptions, are QA Level II and do not require heat numbers on tube steel.	N/A	None	N/A	
Black Iron Pipe (ERCW)	X		This WBN issue was determined not to be factual. Although the pipe in question is buried and could not be visually inspected, a review of the Field Weld Operation Sheets and other QA documents revealed that serial/heat numbers traceable to the material were in accordance with site procedural and upper-tier requirements.	N/A	None	N/A	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
Small Code Items	X		This WBN issue was determined to be factual and a problem. Improper identification, and improper storage and segregation of small code items was determined to exist in a field storage facility. NCR 6834 was issued. Ref. CATD # 40500-WBN-2.	Failure by management to recognize the need for a procedure controlling and segregating small code items in the field to maintain traceability.	The storage area in question has been locked. Material in this facility will be evaluated and DNE will determine acceptability for use.	Failure to maintain traceability could result in degradation of safety-related piping systems; thus, rendering QA aspects of the system to be indeterminate.	
Stainless Steel Pipe/Material	X		At WBN, there was no factual problem with respect to receiving stainless steel pipe without a heat number on each length of pipe. Additionally, no program changes have been made that could result in differences of traceability for stainless steel before and after 1984.	N/A	None	N/A	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.	
Level II Material	X		This WBN issue was determined to be factual, but not a problem. Heat number traceability is only required to segregated storage for Level II items. There has never been a requirement to maintain traceability for Level II material; therefore, it could not have been omitted since 1981.	N/A	None	N/A		
Requisitions	X		This issue was determined to be factual, but not to be a major problem at either SQN or WBN. One isolated case was identified at SQN, but was determined to have been made by the purchasing agent. At WBN, previous QA audits had resulted in a DR and CAR which were traced to improper or inadequate training. Corrective actions had been taken before the ECTG evaluation. However review of the procedure governing changes to requisitioned (AI 5.1) revealed that uncertainty in the interpretation of the methods of authorizing changes contributed to the procedural violations.	Uncertainty in interpretation of the methods of authorizing changes to procurement documents.	CATD 40500-WBN-03 has been issued to track corrective actions. ONP's CAP indicated that AI 5.1 is in complete agreement with the NQAM and no corrective actions will be taken.	N/A	N/A	R3

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
HVAC Duct Supports	X		This WBN issue was determined to be factual but not a problem. HVAC duct supports were designated as QA Level II and do not require heat number traceability to in place installation.	N/A	None	N/A	
Containment Vessel Plate Steel	X		This SQN issue was determined not to be factual. The heat numbers were traceable to the steel plates in accordance with site procedures and upper-tier criteria. However, a side issue concerning the use of wrong type of material for one of the plates was found (i.e., A-36 instead of A-516). Ref. CATD # 40512-SQN-01.	Management's failure to recognize the need for more effective means of verifying material identification at fabrication and installation.	Deviation Report DR SQ-DR-86-185R has been issued. Metallurgical testing will be performed to determine actual type of material. If improper material is installed, it will be replaced with proper material.	The installation of the wrong material will degrade the integrity of the system. The feature may not be capable of carrying the designed load if the improper material is of a lower strength.	
Loss of Material Identification	X		This BFN issue was determined not to be valid. Upper-tier and site procedures are in place governing the identification of material in storage. Material is traceable by either IVA 575, vendor or other plant documentation.	N/A	None	N/A	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	SIGNIFICANCE	COLLECTIVE SIGN.
Q Material	X		This WBN issue was determined not to be factual. Material in DNC storage is not required to be identified as Quality. It is only done as a good practice. ONP procedures identify required designations which are implemented.	N/A	None	N/A	
Black Pipe		X	This WBN issue was determine not to be factual. DNC has in place procedures for the verification and validation of heat number transfers. Traceability inspections are performed at the time of use. If traceability has not been maintained, the material cannot be used in traceability/code required systems.	N/A	None	N/A	

TABLE OF CONTENTS
SUBCATEGORY REPORT FOR MATERIALS IDENTIFICATION

1.0 CHARACTERIZATION OF ISSUES

1.1 Introduction

This subcategory report only addresses the concerns regarding material marking as required by upper-tier and site procedures. The capabilities of the required material markings to facilitate traceability to the certification documentation as required for ASME Section III, Pressure Boundary Material are addressed in Subcategory Report 40700, Procedural Control.

There are 18 concerns in the subcategory Material Identification. The concerns were grouped into 15 major issues to aid in the evaluation effort.

- ASTM A-307 Bolts.
- Austenitic Stainless Steel
- Valves (Test 70)
- Structural Steel
- Tube Steel
- Black Iron Pipe/ERCW
- Small Code Items
- Stainless Steel Pipe/Material
- Level II Material
- Requisitions
- HVAC Duct Supports
- Containment Vessel Plate Steel
- Loss of Material Identification
- Quality Material
- Black Pipe

1.2 Description of Issues (As Originally Perceived)

1.2.1 ASTM A-307 Bolts. (Concern IN-85-388-003)

- No manufacture marking and storage separation on ASTM A-307 bolting material.

1.2.2 Austenitic Stainless Steel (concern EX-85-002-005)

- Use of unapproved temporary paint markers on stainless steel.

1.2.3 Valves (Test 70) (concern EX-85-181-001-S)

- Mark number identification tags are paper or metal and can be removed or replaced by anyone.

1.2.4 Structural Steel (concerns IN-85-460-002, XX-85-111-001 and WI-85-041-014)

- A36 material in the Modifications (MA) Material Storage (outside) with no heat number.

- Structural steel is not marked with heat/lot number and is therefore not traceable. (Office of Nuclear Power [ONP])

- A36 Structural Steel is not marked with heat/lot number and is therefore not traceable. (ONP)

1.2.5 Tube Steel (concern IN-85-441-001)

- Heat number and other data not scribed on tube steel (hangers). Attached tags have heat number only written on them.

1.2.6 Black Iron Pipe/ERCW (concern IN-85-911-001)

- Outside pipe run (black iron) for the essential raw cooling water (ERCW) does not have any heat numbers stamped on it.

1.2.7 Small Code Items (concern WI-85-053-005)

- Small code items are not controlled in storage and during issuance. Therefore, traceability is indeterminate.

1.2.8 Stainless Steel Pipe/Material (concerns IN-85-443-003 and IN-85-443-004)

- QA stainless steel pipe is received without heat number stenciled or scribed on by the vendor, only identified by markings on the bundle. Often the stainless steel pipe loses heat number identification and must be discarded.

- Before 1984, QA stainless steel pipe was installed with no heat number stenciled/scribed on the pipe. Inadequate receiving and storage practice at the time does not provide confidence that heat number on the tags is the same heat number received from vendor.

1.2.9 Level II Material (concern IN-85-388-004)

- QA Level I and II materials received the same treatment up to 4-5 years ago. Then the heat number was omitted from level II. No traceability when requisitioned out.

1.2.10 Requisitions (concern WI-85-036-002)

- Material requisitions are being changed and altered later.

1.2.11 HVAC Duct Supports (concern IN-85-667-002)

- Numerous HVAC duct supports are installed without heat number throughout the building.

1.2.12 Containment Vessel Plate Steel (concern XX-85-120-003)

- Heat numbers were placed on approximately 5 plates on the containment vessel when it was discovered there were no heat numbers on these plates. This was done without quality's knowledge.

1.2.13 Loss of Material Identification (concern BFN-85-008-002)

- Loss of material identification after receipt inspection. Material is issued without identification and could be installed without material identification.

1.2.14 Quality Material (concern IN-86-282-N06)

- Q material is not identified as Q while in storage--possible lack of traceability.

1.2.15 Black Pipe (concern IN-85-454-003)

- Black pipe has heat number on one end. If this end is cut off, the rest of the pipe is discarded as heat number is often not transferred.

2.0 SUMMARY

2.1 Summary of Issues

The basic perceived problems expressed by the Concerned Individuals (CIs) and contained within the report are that material identification and traceability is not maintained during the construction and operation of the plants, that unapproved temporary markers are used on stainless steel material, that unauthorized changing or revising of material requisitions occurs, and that questionable methods are used for physically tagging material.

There are 18 employee concerns, grouped into 15 issues, that are discussed in this subcategory report. Nine of these issues were determined to be factual. Of these nine factual issues, five did not represent a problem, two had been previously corrected, and two in which corrective actions are required. Five of the issues were determined not to be factual. One issue was determined not to be factual but did yield a side issue where corrective action is required. A summary of these issues and the associated procedures, requirements and standards is tabulated in Table 5-1A, "Summary of Issues in Material Identification" in Section 5. The three issues (arising from five employee concerns) which require corrective actions are identified below:

Factual Issues Requiring Corrective Action

- The use of unapproved marking material on austenitic stainless steel. Approval for paint marking material on stainless steel is in part required to ensure a minimum halogen content (e.g., Chlorine) which can promote corrosion of the metal. A nonconformance report (NCR Number 6870) was issued by TVA for this issue and corrective actions are pending its approval and disposition.

- Improper identification of small code items and lack of traceability of material requirements to the manufacturer. Control and traceability of ASME code fittings and bolting materials in the warehouse storage areas were found to be adequate, contrary to the concerns in this issue. However, small code fittings were not properly identified or segregated in a field storage area. Improper identification is in nonconformance with TVA procedures. NCR number 6834 was issued by TVA for this issue and corrective action is pending approval and disposition of the NCR.

Side Issue Requiring Corrective Action

- The side issue of incorrect type of structural steel material used for the fabrication of a support pad on the containment vessel liner was identified while evaluating the concern of improper heat numbers being placed on support pads for the containment vessel (concern XX-85-120-003). The side issue identified resulted in a procedural violation and is being addressed through Deviation Report SQ-DR-86-185R.

2.2 Summary of Evaluation Process

The concerns associated with this subcategory report were evaluated in accordance with the Material Control Category Evaluation Plan. The elements in this evaluation plan were evaluated independently. Therefore, the evaluation methodology utilized will vary according to the nature of each element; in general, the evaluation methodology consisted of the following:

a. Compiled and reviewed all applicable Division of Nuclear Construction (DNC) and ONP governing upper-tier documents, site procedures, practices, and requirements.

b. Performed plant observations.

c. Performed random samples of inspection reports, drawings, and material documentation to determine adequate implementation of procedures.

d. Interviewed responsible DNC and ONP employees, management, craft personnel, NSRS investigators, and past TVA employees.

e. Retrieved and reviewed all NSRS, Quality Technology Company (QTC), Nuclear Regulatory Commission (NRC), and site reports previously conducted regarding concerns encompassed in this report.

f. Interfaced and reviewed existing report findings generated by other categories in the task group applicable to concerns addressed in this subcategory.

2.3 Summary of Findings

Of the 15 issues raised by the various employee concerns contained in this subcategory, three were determined to be factual or represent a side issue (which arose from a noncompliance of a procedure, requirement, or standard) and requires corrective actions.

The following is a summary of the findings and conclusions for each of the 15 issues contained within this subcategory report.

2.3.1 ASTM A-307 Bolts (The issue was determined to be Class C)

The issue was WBN-specific and was raised by the single concern in this element that unmarked ASTM A-307 bolting is installed without manufacturers marking and inadequate storage segregation.

Testing of ASTM A-307 bolting material installed without manufacturers identification markings was done prior to this evaluation to ensure material met the requirements of ASTM A-307. Storage and marking of ASTM A-307 material in warehouse and field storage were considered adequate. Details of the testing and marking are provided in section 4.1. This issue was factual but had been previously corrected.

2.3.2 Austenitic Stainless Steel (The issue was determined to be Class D)

The issue was WBN-specific and was raised by the single concern in this element that unapproved temporary paint markers were used on stainless steel material. The element findings revealed the usage of unapproved temporary paint markers on stainless steel material was found to be factual during the evaluation. This factual issue requires corrective action and is being tracked through CATD 40500-WBN-01.

2.3.3 Valve (Test 70) (The issue was determined to be Class B at WBN and BLN. However, at SQN the issue was determined as Class A)

The issue was WBN-specific and was raised by the single concern in this element that on valve inspection (test 70), Quality Control (QC) verifies the proper valve by mark number tag, which is installed by the warehouse or vendor and is often just paper or metal which can be removed or replaced easily. This issue was factual but does not represent a problem. When valve mark number tags are replaced or removed, procedures are inplace at Watts Bar (WBN) and Bellefonte Nuclear (BLN) Plants to ensure the correct valve is installed and can be verified. Therefore mark number tags are not essential for valve identification/installation verification purposes. Valve mark numbers are not required as a means to identify valves at installation at Sequoyah Nuclear Plant (SQN).

2.3.4 Structural Steel (The issue was determined to be Class B at WBN and BLN. However, the portion of this issue which addresses the storage of unmarked structural steel in the modifications storage area at WBN is determined to be Class A)

The issue was raised by three concerns (two WBN-specific and one BLN specific) in this element that structural steel material is not marked with heat number/code in the storage area of the Power Stores Section storage and Modification Section storage areas. This concern was factual but did not present a problem. ASTM A36 structural steel material was stored in WBN Power Stores without heat number traceability. However, this material was classified as QA Level II structural steel which does not require heat number traceability. QA Level II structural steel material only requires traceability to the procurement document. The QA Level II structural steel material observed was traceable to the procurement document by use of the contract and unique identification. The Modification Section storage area identified in the concern did not exist at the time the evaluation was performed.

2.3.5 Tube Steel (The issue was determined to be Class B)

The issue was WBN-specific and was raised by the single concern in this element that heat numbers are not scribed on tube steel (hangers). This concern was determined to be factual but did not represent a problem. It was determined through this evaluation that Tube Steel (hangers) at WBN is designated as Quality Level II material. Level II material does not require traceability to in-place storage but only requires traceability to segregated warehouse storage. All structural steel issued from warehouse storage is stamped with the respective heat number regardless of traceability requirements. |R3

2.3.6 Black Iron Pipe/ERCW (The issue was determined to be Class A)

The issue was WBN-specific and was raised by the single concern in this element that the outside pipe run (black iron) for the ERCW does not have any heat number stamped on it. This concern was determined not to be factual because the ERCW outside pipe run is buried and visual observation could not be performed to determine if heat numbers were marked on ERCW piping. However, it was apparent through a review of associated field weld operation sheets and NPP-1 forms that traceability was maintained by serial number. Traceability of material to installation by serial number is acceptable and meets the upper-tier document requirements.

2.3.7 Small Code Items (The issue was determined to be Class D).

The issue was WBN-specific and was raised by the single concern in this element that small code items are not controlled in storage and during issuance. Part of this concern was factual, requiring corrective action and is being

tracked through CATD 40500-WBN-02. It was found during this evaluation that material (3/4-inch fittings and smaller) issued to craftsman in the field was not adequately identified. However, control and issuance of ASME code fittings and bolting material in the warehouse storage (including code bolting in the field storage area) was adequate.

2.3.8 Stainless Steel Pipe/Material (The issue was determined to be Class A)

The issue was WBN-specific and was raised by the two concerns in this element that austenitic stainless steel pipe is being installed with no heat number stenciled and/or scribed on the pipe and that receipt and storage practices in effect before 1984 do not provide confidence that the heat number on the tag was the heat number received from the vendor. This concern was determined not to be factual. Observation of stainless steel piping stored in the warehouse storage area revealed that material was identified. Review of site procedures revealed that adequate measures are established for control and traceability. Review of past procedures did not reveal any program changes which would affect the control and traceability of material. However, one concern in this element raised the question of material waste because of inadequate identification. The waste portion of the concern is addressed in the Management and Personnel subcategory report 71100.

2.3.9 Level II Material (The issue was determined to be Class B)

The issue was WBN-specific and was raised by the single concern in this element that since 1981, heat traceability has been omitted from Level II material when issued from storage. This concern was factual but did not represent a problem because heat traceability for Level II material is only required for segregated storage and is not required for material requisitioned from storage area designated for Level II use. No documents were found to indicate QA Level II material ever required heat number traceability when issued from storage.

2.3.10 Requisitions (The issue was determined to be Class C at WBN and Class A at SQN)

The issue was WBN-specific and was raised by the single concern in this element that unauthorized changes are being made to requisitions. This concern was factual at WBN but had previously been corrected. Unauthorized changes were

made to requisitions by the purchasing agents affecting WBN. The changes did not affect the items suitability for use. These areas were identified by a corrective action report before the Employee Concerns Program. This issue was not found to be factual at Sequoyah Nuclear Plant (SQN) where a review of site procedures and interviews were conducted.

2.3.11 HVAC Duct Supports (The issue was determined to be Class B)

The issue was WBN-specific and was raised by the single concern in this element that there are numerous HVAC duct supports with no heat numbers throughout Reactor Buildings 1 and 2. This issue was factual but did not represent a problem. HVAC duct supports are designated QA Level II which do not require heat traceability to inplace storage installation/location.

2.3.12 Containment Vessel Plate Steel (The issue was determined to be Class E)

The issue was SQN-specific and was raised by the single concern in this element that heat numbers had been placed on approximately five plates on the containment vessel after it was discovered there were no heat numbers on the plates. It was stated that this was done without the knowledge of the Division of Quality Assurance (DQA) and violated the QA procedures. This issue was determined not to be factual at SQN. However, an unrelated finding (during the course of the evaluation) showed that incorrect material was used to fabricate one of the plates in question. This finding is being tracked through CATD 40512-SQN-01.

2.3.13 Loss of Material Identification (The issue was determined to be Class A)

The issue was specific to BFN and was raised by the single concern in this element that there is a loss of material identification after receipt inspection. Therefore, material is issued without identification and cannot be verified upon installation. This concern was determined not to be factual. Procedures which control the identification of material during storage, issuance, and installation are adequate. However, it was discovered that the information which was required to be entered on the storeroom requisition (575N) by the requester or the warehouse personnel was incomplete. Some information was omitted from the 575N but this did not affect the traceability of the material. It was also discovered that the 575N (material traceable document) was not included in several workplans as required by site procedures. (Material traceability to its procurement was maintained through other

documents included in the workplan.) (e.g. Vendor Certification, Material Traceability List [BF-185])

2.3.14 Quality Material (The issue was determined to be Class A)

The issue was WBN-specific and was raised in the single concern in this element that Q (Quality) material is not identified as Q while in storage. Construction procedures do not require the identification of quality material while in storage. (This issue was addressed in Subcategory Report MC40400, Storage and Housekeeping.) Material observed in the ONP storage area was identified as quality or nonquality as required by ONP procedures. This issue was determined not to be factual.

2.3.15 Black Iron Pipe (The issue was determined to be Class A)

The issue was WBN-specific and was raised in the single concern in this element that black pipe has a heat number on only one end. If this end is cut off, the rest of the pipe is discarded since the heat number is often not transferred. The basis for the concern in this issue was economics and not safety; however, this issue was evaluated and not found to be factual. Piping in storage areas is stamped with heat numbers on both ends. Procedures are in place to prevent the loss of heat number traceability when piping material is divided. Material waste is addressed in Management and Personnel Subcategory 71100.

2.4 Summary of Collective Significance

2.4.1 Management Effectiveness

The findings in this subcategory revealed that areas do exist that affect management effectiveness because of the lack of communication between supervision and craft personnel governing the requirements of existing procedures which would prevent the occurrence of the concerns.

2.4.2 Employees Effectiveness

The findings of this subcategory revealed that some areas of concern exist where more attention could be focused on the details governing procedures used by DNC QC inspectors and on the lack of communication between craft personnel and supervision. Existing site procedures which were inplace were considered adequate to prevent the occurrence of the concerns.

2.4.3 Technical Adequacy

The finding of this subcategory do not affect technical adequacy.

2.5 Causes

Of the 18 concerns (corresponding to 15 issues) evaluated in this report, 3 findings (corresponding to 3 issues) were factual or had a side issue identified requiring corrective actions. The following is a summary of the causes of these 3 issues:

2.5.1 Containment Vessel Plate Steel (SQN) (Side Issue)

The use of incorrect type of structural steel plate material for a support pad on the containment vessel liner was related to the inadequate material inspection by the DNC Quality Control Inspector during the issuance of the material.

2.5.2 Austenitic Stainless Steel (WBN)

The use of unapproved temporary markers on stainless steel material was related to the inadequate training of site procurement personnel in the procedures and guidelines.

2.5.3 Small Code Item (WBN)

The lack of control and traceability of small (3/4-inch and smaller) ASME section III fittings in the steamfitter field storage trailer was because of the inadequate training of the responsible craft personnel in the procedures and guidelines.

2.6 Corrective Actions Taken

The following is a summary of the corrective action plans for those findings which require that corrective action be taken.

2.6.1 Containment Vessel Plate Steel (Side Issue)

SQN ONP has identified the use of incorrect material for a containment liner support pad by initiation of Deviation Report SQ-DR-86-185R. No additional corrective actions had been taken at the time of issuance of revision 3 of this report. |R3

2.6.2 Austenitic Stainless Steel

WBN DNC has identified the issue of unapproved markers being used on stainless steel by initiation of NCR 6870. No corrective actions had been taken at the time of issuance of revision 3 of this report, but are pending the disposition and approval of NCR 6870. |R3

2.6.3 Small Code Items

WBN DNC has identified the issue of inadequate control and traceability of small (3/4-inch and smaller) ASME section III fittings in the steamfitter field storage trailer by initiation of NCR 6834. The storage area has been locked and secured to prevent access. No additional corrective actions had been taken at the time of issuance of revision 3 of this report, but corrective actions by DNC are pending the disposition and approval of NCR 6834. |R3

3.0 EVALUATION PROCESS

3.1 Evaluation Methodology

The various issues raised by the employees concerns within this subcategory were evaluated according to the Material Control Category Evaluation Plan.

The following is a summary of the specific evaluation methodology utilized in the evaluation of the 15 issues comprising this subcategory.

3.1.1 ASTM A-307 Bolts

This element was evaluated utilizing the following methodology:

a. Upper-tier documents for material identification requirements were compiled and reviewed.

b. Reviewed WBN site procedure governing structural and miscellaneous bolting connections.

c. Reviewed TVA memorandum concerning marking requirements for bolting material.

d. Reviewed NCRs concerning marking and identification of bolting material.

e. Plant storage walkdowns were performed to observe bolting material for required marking identification.

f. Interviewed Stone and Webster personnel concerning a recent evaluation to determine the report findings.

3.1.2 Austenitic Stainless Steel

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier requirements for approved temporary markers for use on stainless steel material.

b. Reviewed site procedures relating to temporary markings approved for use on stainless steel material.

c. Reviewed QTC files for additional information relating to the element.

d. Performed plant and storage walkdown to observe the type paint markers used to mark stainless steel material.

e. Reviewed purchase document and certification of temporary markers received at WBN.

3.1.3 Valves (Test 70)

This element was evaluated utilizing the following methodology:

a. Reviewed site procedure addressing valve procurement and installation inspection requirements.

b. Tracked the document trail for ASME code valves to the applicable certifying documentation without use of the mark number as the identifying numbers.

c. Interviewed Division of Nuclear Engineering, site engineering and QC personnel to determine method used to perform valve inspection at installation.

3.1.4 Structural Steel

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier requirements concerning material identification for storage.

b. Reviewed ONP contract and purchase specification for identification requirements.

c. Observed ONP storage areas for marking identification and traceability of structural steel material.

3.1.5 Tube Steel

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier requirements to determine the identifying markings required for Levels I and II material.

b. Contacted QTC for any additional information to help identify specific items related to this concern.

c. Conducted interviews with cognizant individuals to determine the requirements on marking tube steel while in warehouse storage.

d. Observed tube steel in warehouse storage area to determine the identifying markings on tube steel.

3.1.6 Black Iron Pipe/ERCW

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier document requirements for marking identification traceability requirements for code piping systems.

b. Reviewed Field Weld Operation Sheet for the ERCW outside pipe run to determine the traceable identification number.

c. Reviewed NPP-1, "Report for Fabricated Nuclear Piping Subassemblies Field Weld Operation for ERCW Outside Pipe Run."

3.1.7 Small Code Items

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier document requirements for material marking identification and traceability for small code bolting and fittings.

b. Observed warehouse and field storage areas for control and traceability of small code items.

c. Interviewed material clerks and craft personnel in warehouse and field storage areas to ascertain method and traceability of small code items.

3.1.8 Stainless Steel Pipe/Material

a. Reviewed the 1974 American Society for Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section II Part A Material Specifications SA-312 and SA-530, to determine requirements for austenitic stainless steel code pipe.

b. Reviewed WBN site procedures for the marking and traceability requirements for stainless steel pipe.

c. Interviewed warehouse clerks and field engineering personnel to determine if stainless steel material was properly identified and traceability was adequate during receipt and installation.

d. Performed walkdown of warehouse and field storage area to determine if stainless steel code pipe had proper identification and marking for heat traceability.

3.1.9 Level II Material

This element was evaluated utilizing the following methodology:

a. Reviewed upper-tier document requirements for traceability for Level II structural steel material.

b. Reviewed NSRS Report I-85-146-WBN, "Material Control Heat Number Traceability," for findings and conclusions.

c. Reviewed TVA letter to NRC addressing traceability of Level II material.

3.1.10 Requisitions

This element was evaluated utilizing the following methodology:

a. Reviewed information supplied by QTC addressing and identifying specific items related to the concern.

b. Reviewed site procedures governing changes to site requisitions.

c. Interviewed engineering personnel to determine if examples of improper changes to requisitions have been made.

3.1.11 HVAC Duct Supports

This element was evaluated utilizing the following methodology:

a. Reviewed TVA drawings for HVAC duct supports to determine quality level of material used.

b. Reviewed site procedures for supports.

c. Reviewed bill of material for HVAC support.

d. Reviewed upper-tier requirements for traceability applicable to level of material used.

3.1.12 Containment Vessel Plate Steel (SQN)

This element was evaluated utilizing the following methodology:

a. Reviewed the NSRS report I-85-865-SQN to determine if findings and conclusion were adequate.

b. Reviewed documentation researched in the NSRS report to verify findings.

c. Contacted NSRS investigator for additional information.

d. Contacted individual E for clarification of information (individual E designated in NSRS report).

e. Observed support pads for heat numbers.

f. Reviewed certification documentation and contracts for heat numbers traceability and correct usage.

g. Reviewed form TVA 575N (Storeroom Requisitions) for structural steel, other than A-36, issued from Power Stores to ensure correct material was issued for generic applicability purposes.

3.1.13 Loss of Material Identification

This element was evaluated utilizing the following methodology:

a. Reviewed BFN-ONP site procedures to determine requirements for material identification markings from storage to installation.

b. Observed material stored in Power Stores for material identification and markings.

c. Reviewed Storeroom Requisition (575N) to determine if required material traceability markings have been entered by Power Stores.

d. Reviewed ONP workplans to determine if material identification has been maintained to installation.

3.1.14 Quality Material

This element was evaluated utilizing the following methodology:

a. Reviewed DNC and ONP site procedures to determine the marking requirements of material while in storage.

b. Interviewed responsible construction personnel to determine site procedures and upper-tier documents requiring material to be identified as Q or non-Q material.

c. Observed DNC and ONP storage to determine if material is identified as Q or non-Q material.

3.1.15 Black Pipe

This element was evaluated utilizing the following methodology:

a. Reviewed QTC files for additional information addressing the concern.

b. Reviewed WBN-DNC response memorandum addressing the concern.

c. Reviewed WBN-DNC site procedures for material verification and validation.

d. Interviewed the Material Services Unit lead inspector and the Warehouse Services Unit chief storekeeper to determine the method used to mark piping material.

3.2 Requirements or Criteria Established for Individual Issues

3.2.1 ASTM A-307 Bolts

3.2.1.1 10 CFR 50, Appendix B, "Quality Assurance Criteria For Nuclear Power Plants and Fuel Reprocessing Plants," Criterion VIII, "Identification and Control of Material, Parts, and Components."

3.2.1.2 TVA Topical Report 75-1A, Section 17.1.8, "Identification and Control of Material, Parts and Components," Subsection 7.1.8.2, "Office of Construction."

3.2.1.3 TVA General Construction Specification G-53 Certification, Identification, Storage, and Tightening Requirement of Bolting Material for Nuclear Power Plants, Section 2.2, "Identification and Marking."

3.2.1.4 WBN Site Procedure QCP 1.42-3, Revision 5, October 17, 1985, "Structural and Miscellaneous Bolting Connections."

3.2.2 Austenitic Stainless Steel

3.2.2.1 TVA General Construction Specification G-29, Process Specification 4.M.1.1, Revision 9, January 24, 1985, Section 3.1.2, Temporary Markers.

3.2.2.2 Purchase Specification PF-1053, Revision 3, July 22, 1981, Purchase Specification for Temporary Marking Material For Use on Stainless Steel and Corrosion-Resistant Alloys.

3.2.2.3 WBN Site Procedure QCP 4.10.11, Revision 5, "External Cleaning," Section 4.5, "Painting Type Markers"

3.2.3 Valves (Test 70)

3.2.3.1 WBN Site Procedure QCP 4.10.9, Revision 7, "Valve Installation Inspection"

3.2.3.2 SQN-ONP Site Procedure M&AI-1., "Control of Weld Documentation and Heat Treatment"

3.2.3.3 SQN-ONP Site Procedure AI-19 (Part IV), Revision 19, Plant Modification: After Licensing

3.2.3.4 SQN-ONP Standard Practice SQA-162, Revision 5, ASME Valve Parts, Appendix 2

3.2.3.5 SQN-ONP Standard Practice SQA.45, Revision 26, Quality Control of Material and Parts and Service

3.2.3.6 SQN-ONP Site Procedure MI-6.21, Revision 11, Repairs Replacement and Fabrication of ASME Section XI Components

3.2.3.7 BLN Site Procedure QCP 6.9, Revision 7, "Valves"

3.2.4 Structural Steel

3.2.4.1 WBN-ONP NQAM Part III, Section 2.2, "Identification for Storage."

3.2.4.2 ANSI N45.2.2, "Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants"

3.2.4.3 BLN-ONP Standard Practice BLA 9.4, Revision 8, "Storage of Procured Material"

3.2.5 Tube Steel

3.2.5.1 TVA General Construction Specification G-36, "Quality Levels of Structural Material"

3.2.6 Black Iron Pipe/ERCW

3.2.6.1 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plant," Criterion VIII, "Identification and Control of Material, Parts, and Components."

3.2.6.2 ANSI N45.2.8-1985, "Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for Construction Phase of Nuclear Power Plants," Section 4.4, "Inspection"

3.2.6.3 WBN-DNC Procedure WBFI-M8, "Instruction for Preparing Documentation of ASME Code Systems"

3.2.7 Small Code Items

3.2.7.1 TVA General Construction Specification G-53, "Certification, Identification, Storage, and Tightening Requirements of Bolting Material for Nuclear Power Plants"

3.2.7.2 NB2000, Material of ASME Section III, 1971 edition through summer 1973 addenda, "Rules for Construction for Nuclear Power Plants Components."

3.2.8 Stainless Steel Pipe/Material

3.2.8.1 ASME Boiler and Pressure Code, Section III, Part A, "Material Specification SA 312 and SA-530"

3.2.8.2 WBN-QCP 1.50, Revision 0 and 6 "Material Verification and Validation."

3.2.8.3 WBN-QCP 1.6, Revision 0, "Receipt Inspection of Safety-Related Procedures"

3.2.9 Level II Material

3.2.9.1 10 CFR 50, Criterion VIII, "Identification and Control of Material, Parts and Components."

3.2.9.2 ANSI-N45-2-1971, "Quality Assurance Program Requirements for Nuclear Power Plants," Section 2, Quality Assurance Program.

3.2.9.3 TVA General Construction G-36, Revision 0, "Quality Level of Structural Material."

3.2.10 Requisitions

3.2.10.1 WBN-ONP Administrative Instructions, AI-5.1, "Material Procurement and Control"

3.2.10.2 SQN-ONP Administrative Instruction, AI-11, Section 8.0 "QA Level Changes and/or Description Changes and/or Substitution," Revisions 32 through 36.

3.2.11 HVAC Duct Supports

3.2.11.1 WBN-QCP 4.8, "Inspection and Documentation Requirements for Mechanical Supports"

3.2.12 Containment Vessel Plate Steel

3.2.13 Loss of Material Identification

3.2.13.1 BFN Nuclear Quality Assurance Manual

3.2.13.2 BFN Standard Practice BF-16.4, Revision 2,"Material, Components, and Spare Parts, Receipt, Handling, Storage, Issuing, Return to Storeroom and Transfer"

3.2.13.3 BFN Technical Specification TS 01.00.15.14.03, Revision 0, "Equipment and Material Storage Requirements for Nuclear Power Stores"

3.2.14 Quality Material

3.2.14.1 Watts Bar Nuclear Plant - Office Nuclear Power Administrative Instruction, AI-5.6, "Material Storage Handling and Shipping Requirements for Watts Bar Nuclear Plant"

3.2.15 Black Pipe

3.2.15.1 Watts Bar Nuclear Plant, Quality Control Procedure QCP 1.50, "Material Verification and Validation, Revision 0"

"Office of Construction," requires material, parts, and components be identified by heat number, lot number, unique serial number, or other means appropriate to their importance to safety and material identification be maintained throughout fabrication, assembly, installation, and use. Where size and accessibility permit, the identification will be on the item but such as not to interfere with the performance characteristics of the item.

In other cases the identification will be maintained on record traceable to the item such as by installation location of small inaccessible parts or by general location of concrete and embedded material and parts therein.

A review of G-53, Section 2.2, "Identification and Marking," found that Subsection 2.2.1 states bolting material shall be marked for identification by manufacturer or supplier in accordance with the applicable material specification and the grade of material.

A review of WBN Site Procedure QCP 1.42-3, Revision 5, October 17, 1985, "Structural and Miscellaneous Bolted Connections," found references to G-53, ASME Section III and Non-ASME Section III. Section 6.0, Subsection 6.6 requires verification of correct bolt and nut material upon installation by the inspector. Section 5.0, "Responsibilities," subsection 5.1 designates the Civil Quality Control (CQC) unit responsible for inspection, testing, and documentation as specified in the procedure and American Institute of Steel Construction (AISC) Manual. Attachment B of QCP 1.42-3 incorporated marking requirements for ASTM and SAE steel bolts and nuts.

A review of TVA memorandum MEB 790608 372, "Marking Requirements of ASTM A-307 Bolting," found it to state that manufacturer's identification marking must appear on the bolting to meet specification requirements on all A-307 bolting. Future shipments without manufacturer's identification should be rejected. Manufacturers or suppliers should be informed that they are not meeting specification requirements and a determination made as to what requirement they are certifying bolting to meet. The memorandum recommends certifying lots of unidentified material already received onsite as meeting ASTM A-307 quality by testing in accordance with paragraph 7 of that specification.

A review of NCR 1602, Revision 0, dated June 18, 1979, "All ASTM A-307 Bolts Not Having Manufacturer Identification Marking," found that it addresses failure of manufacturer to place identification markings on bolts. The NCR was dispositioned use-as-is pending test results from Singleton Lab. This NCR referenced aforementioned TVA memorandum MEB 790608 372, in which testing of ASTM A-307 bolting material in accordance with paragraph 7 of the specification was recommended.

Bolting material identified in NCR 1602 was verified as meeting ASTM A307 by testing in accordance with paragraph 7 of that specification, as equivalent to the manufacturers requirements, using Request for Delivery (RD) Number as lots on the bases of nominal size, length and head detail. The same criteria was used for bolts which could not be identified by RD Number but treated as additional lots. Since only four manufacturers were involved in the manufacturing of these fasteners, the additional lots represent a random overtesting for verification, all test results including dimension inspections were acceptable.

A review of NRC letter to H. G. Parris, A02 850517 001, "Concern Regarding TVA Construction Sites," found the following. Reference enclosure 1, concern 1: "A concern has been expressed that there is no material control of ASME bolts smaller than one inch; therefore, the bolts less than one inch are mixed and no one knows where the good ones are." Reference Enclosure 2, "Questions on Watts Bar Concerns" paragraph 1, identifies instances where unmarked bolts were installed in the facility on ASME components and supports and that NCRs were initiated in 1979 (NCR 1602) and in 1981 (NCR 3372) which supported the issue regarding the purchase and installation of bolts without required markings. NRC requested the reason for the QC breakdown in bolt control, an explanation for the NCR (3372) in 1981 and a review of whether the problem has generic applicability to other QC areas. NRC requested basis for determining compliance with Criterion VIII of Appendix B to 10 CFR 50.

A review of TVA letter L44 850605 803 to NRC, in response to NRC letter A02 850517 001 to TVA, found TVA's response to reasons for the apparent QC breakdown in bolt control was "some ASTM A-307 bolts had been received onsite and issued to the field without manufacturer identification markings on the head. TVA had erroneously accepted this material." TVA's WBN corrective action consisted of random sampling 44 lots of various size bolts produced by five suppliers (reference NCR 1602) for testing at the TVA Singleton Laboratory. Testing results clearly demonstrated that all bolts with unmarked heads met the requirements of ASTM and ASME A/SA 307. TVA's

response to reasons for the repeated nonconforming condition in 1981 (NCR 3372) and evaluation of whether this occurred in other QC areas was a failure of the receiving inspector to examine bolting material according to required procedures. However, through this evaluation a review of the applicable site procedures, QCP 2.4 Erection and Inspection of Structural and Miscellaneous Steel, QCP 1.42-2 Bolt and Gap Inspection for Bolt Anchors Assemblies, QCP 1.42-3 Structural and Miscellaneous Bolted Connections and QCP 4.23-8 Support Final Inspection, revealed that the field inspector was also required to assure that the correct type bolting material was installed. (Again, a sample of unmarked bolts were sent to Singleton Lab for testing and found to meet ASTM and ASME A/SA-307 requirements.) To TVA's knowledge, no breakdown has occurred in other QC areas. TVA's basis for determining compliance with Criterion VIII of Appendix B to 10 CFR 50 is addressed thoroughly by the referenced letter L44 850605 803 to NRC from TVA.

A review of NCR 3372 dated June 17, 1981, was conducted. It addressed ASTM A-307 bolts received after June 18, 1979, which had no manufacturer identification marking.

A summary of this NCR is given below. Apparent cause: Failure of receiving inspector to examine bolts for compliance to the requirement of ASTM A-307. Recommended disposition: Verify lots of Group 1 bolts as meeting ASTM A-307 required quality by testing in accordance with paragraph 7 of that specification as equivalent to the manufacturers' requirements, using Request for Deliver (RD) Numbers and size as lots on the basis of nominal size, length and head details. All test results including dimensional inspections were acceptable.

Group 2 bolts were dispositioned use-as-is for the following reasons:

1. ASTM A-307 is the lowest strength ASTM classification for bolting material. Any ASTM bolt installed would be of equal or greater strength.

2. Bolts without markings are traceable to each vendor by size.

The bolts in Group 2 were manufactured by the same company as the bolts that were tested and accepted in accordance with Paragraph 7 of the specification in Group 1.

Action required to prevent recurrence: Reference TVA memorandum SQP 810707 033, NCR 3372, Division of Nuclear Engineering (DNE) approved the actions to be taken to prevent recurrence of a nonconforming condition: These actions require bolts to have a distinguishing manufacturer's mark as required in ASTM-A-307, Section 8.

A review of TVA letter to NRC L44 850703 801, "Control of Small Diameter Bolting Material," found reference to TVA memorandum B45 850708 253 which addresses the findings of a NRC inspection during the week of April 29 through May 3, 1985, and Institute for Nuclear Power Operations (INPO) Program review of unit 2 during the months of May and June 1985.

Based on information submitted in the memorandum, TVA determined the bolting control program at WBN ensures that quality bolting materials were procured and installed and does comply with Criterion VIII of Appendix B to 10 CFR 50.

A review of NCR 6416 found that unmarked bolts were installed in subassemblies 1-062-L112B-01/4 and 1-062-L558-0001, making it impossible to determine type and grade of bolt.

A review of DNE disposition memorandums for NCR 6416 (B45 860115 271 and B26 860328 028) found the following. Bolting material (SAE) provided as part of vendor-supplied equipment is controlled through the requirements specified in the applicable contract between TVA and the vendor. "In the case of Unistrut clamp assemblies, bolting material supplied by Unistrut for use with the clamp assemblies was SAE grade 2 or ASTM A-307 material." SAE grade bolting specified, supplied with, and installed in vendor-supplied equipment is acceptable.

A review of TVA memorandum C24 860210 005, "Bolting Material Used to Complete unit 2," found: Paragraph 1:

> Hex head bolting material, only ASTM A-307 or ASME SA-307 bolting material with the manufacturer's mark, either raised or depressed, on the bolt head will be received and released for new installation. Site procedures and inspection procedures will be revised to ensure installation of acceptable bolting material. The use of SAE bolting is prohibited except when supplied in vendor assemblies.

The use of Unistrut bolts in Unistrut assemblies is acceptable only if bolts are marked with Unistrut identification markings. Unistrut bolting material presently stored in warehouse storage without Unistrut markings are to be segregated and surplused. Paragraph 3 of this memorandum indicates present and future control methods for ASME and ASTM bolting material by Material Services Unit (MSU) inspectors to ensure correct bolting material is received and released from storage areas.

In the NSRS Report 1-85-161-WBN, "Unmarked Bolting Material," a review of the concern in this report was conducted and a recommendation was made to: revise QCP 4.23-8 paragraph 7.8.1 to require verification of bolting material with manufacturer identification stamp; train all QC inspection personnel who inspect to QCP 4.23-8 acceptance criteria to verify that all bolting material has a manufacturer's identification mark; and retrain QC personnel when QCP 4.23-8 is revised.

Tours of field and warehouse storage areas, steamfitter field storage trailer, and electrical field storage trailer found all bolting material observed to have required markings for ASTM A-307 material. Bolting material was separated by size in all storage areas reviewed. According to conversations with the responsible craft personnel, it was discovered that all unmarked bolting material had been returned to warehouse storage.

As a result of a conversation with the Warehouse Services Unit Supervisor it was discovered that unmarked bolting material has been surplused and removed from warehouse stock.

It was discovered through discussions with Stone and Webster evaluators that a review of the WBN Material Control Program was completed the week of March 31, 1985. It was determined by Stone and Webster that past problems with bolting material identification had been identified. These problems were addressed through proposed revisions of WBN procedures and training criteria, and implementation of the present bolting identification program. Recurrences of past bolting identification problems were not foreseen during the completion of WBN construction.

A review of NCR 6660 found that threaded studs were used in vendor supplied component in lieu of alloy steel bolts as shown on vendor supplied drawings and in the vendor catalog.

These studs were not marked in accordance with the applicable ASME or ASTM specification; therefore, correct identification of the stud material cannot be achieved.

Conclusion:

Problems involving bolting identification markings did exist and were identified by NCRs 1602, 3372, 6416, and 6660. Several of these problems were also identified through NRC and INPO findings. As a result of the NRC and INPO findings, TVA revised site procedures QCP 4.23-8, 1.06 and 1.42-3, which was verified by the evaluator, and updated QC training programs to implement the requirement for all bolting material to be marked by the manufacturer, as required by the specification. SAE bolting material was exempt from marking requirements when used in a vendor supplied subassembly. Implementation of the revision to TVA's proposed bolting identification program should prevent future bolting identification marking problems at WBN. Storage and Marking of ASTM A307 Material in Warehouse and Field Storage were considered adequate.

4.2 Austenitic Stainless Steel

4.2.1 Generic

Not Applicable

4.2.2 Site-Specific - WBN (Class D)

Unapproved Temporary Paint Markers

It was found that G-29 Process Specification 4.M.1.1, Revision 9, and 4.M.4.1 Appendix B, Revision 4, contains the approved marker type and the manufacturer.

Purchase Specification, PF 1053 adequately addresses the acceptability, chemical requirements, and required identification for paint markers.

It was found that QCP 4.10.11, Revision 5, Section 4.5, "Paint-Type Marking" states:. . ."any paint-type markings approved in Reference 3.1.1 of the procedure (Process Specification 4.M.1.1)."

Information received from QTC indicated that unapproved paint markers were used all over unit 2 Reactor Building.

Walkdown of Reactor Building unit 2, revealed that white, yellow, and pink markers were used to mark stainless steel pipe in various locations.

A review of purchase contracts and certification letters from the manufacturer revealed that yellow, white, and pink paint markers were purchased but that only pink markers were certified as required by PF 1053, for use on stainless steel material.

Conclusion:

This evaluation revealed that paint markers used for making temporary markings on stainless steel piping material in unit 2 Reactor Building were not certified by the manufacturer as required by Process Specification, PF 1053, Revision 3, Section 2.0. This issue is being tracked through CATD 40500-WBN-01.

4.3 Valves (Test 70)

4.3.1 Generic - SQN (Class A)

A review of SQN GCTF Evaluation Report, "Component Substitutions," Revision 1, for concern EX-85-181-001 found that "Nuclear Power does not use (Test 70) to verify material installation." NQAM part III, Section 2.5, specifies that it is the responsibility of the user to verify correct identity of material before installation. This is used in conjunction with administrative controls on procurement, material receipt inspection, and "buying" material out of power stores to ensure that the proper Quality Assurance (QA) material is installed during maintenance or modification.

A review of the expurgated files, EX-85-181, revealed no additional information.

Interviews with two DNE personnel revealed that valve mark numbers are used to identify valves during modification procurements as a means of categorically associating valves to a specific drawing, bill of material and valve data sheet. Valve mark numbers can be used as a means of properly identifying valves through the associated documentation. It was also indicated through these interviews that a procedure requiring the use of mark numbers as a means of valve identification by DNE did not exist.

Interviews with two Modifications Engineers revealed that inspections were required to be performed per the applicable drawing indicated in the Work Generating Document (WGD). Mark numbers are not used as a means of identifying valves in the work generating document for inspection purposes. Valves are reviewed by the modifications engineer per the drawing, bill of material, and data sheet to assure the proper valve is installed. Material is verified at installation by the applicable QC unit inspectors. It was also indicated that the valve mark number tag attached to the valve is not essential for assuring that the correct valves are installed.

Interviews with two Welding QC Inspectors revealed that installation inspections are performed per the applicable drawing. Material is inspected to the 575, weld data sheet and to the Certified Mill Test Report (CMTR) if required. Also, vendor valve identification tags are used to obtain information from the valve, and mark numbers are not essential in assuring that the correct valves are installed in a system.

An interview with the Assistant Quality Control Supervisor revealed that mark numbers are not used as a means of identifying valves at installation. Valve descriptions are provided on a WGD by the cognizant engineer. The description provided on the WGD is then used by the inspector to perform material verification inspections at installation.

An interview with a Mechanical Maintenance Engineer revealed that valve mark numbers are not the sole identifier for valves and are only used when available. A complete description of the valve is stated on the purchase requisition for identification purposes. The Mechanical Maintenance function is for maintenance and repair and does not encompass modification of plant systems. Maintenance/Repair parts are requisitioned by specific description, and mark numbers are not indicated.

A Review of SQN Standard Practice SQA-162, Appendix 2, Revision 5, ASME Valve Parts, found it to state "The procurement document originator is responsible for insuring that all the required information is specified. Where applicable, the design specification, part number and the drawing shall be included".

Review of SQN Standard Practice SQA-45, Revision 26, Section 5.0, Completion of the Purchase Request/Purchase Requisition, revealed that the component identification number and system number or the exact location(s) where items will be used shall be listed on the purchase document or purchase request. Also that a complete description (nomenclature-for example: vendor style, part or drawing number, size and design information) of the item or service will be listed. Section 6.2, Initiating Organization, requires the initiator to provide a description, the intended use(s) and location of use. The description should include nameplate data or similar information with any special features not described in the model or part number.

A review of SQN Maintenance Instruction MI 6.21, Revision II, Repair, Replacement (and Fabrication) of ASME section XI Component, revealed that subsection 5.6.6 requires the planner to prepare a suitability evaluation per data sheet 5A and obtain the review and concurrence of the cognizant engineer. This is to ensure that the construction code or design fabrication and inspection requirements for the replacement part are at least as stringent as the requirement of the replaced part. Data sheet 5A, suitability of replacement parts (Power Stores Issues and Fabrication) requires that the original component contract/request for delivery (RD) number or TVA drawing, mark number, and Bill of Material be checked for replacement suitability. This procedure addresses the procurement of ASME Section XI components for replacement suitability purposes only and does not encompass material installation.

A review of M&AI-1, Control of Weld Documentation and Heat Treatment, Revision 14, Appendix B, Section 4.0, found it to state that component identification (material identification) shall be completed by the originator/planner prior to the weld being made. Identification shall consist of a brief description, procurement document number/date and other information as known. The QC inspector will complete the material verification by signing the weld data sheet after he has reviewed the 575, Detail Weld Procedure (DWP), etc., to determine proper material for the job. If the inspector is not satisfied with the description provided, additional information may be added by the inspector. This procedure does not require the use of valve mark numbers for valve installation inspection. |R3

A review of Sequoyah Nuclear Plant - Office of Nuclear Power (SNP-ONP) Administrative Instruction AI-19 (Part IV), "Plant Modification: After Licensing," found it to state that all modifications will be worked in the field utilizing workplans as described in this procedure. The procedure did not require the use of valve mark numbers for identification of valve at installation. However, the procedure did require that an equipment description be provided (by the cognizant engineer) which shall be clear enough that anyone performing work on the workplan could find the equipment from the description provided.

A review of six SQN Workplans (WPs) 9457, 9423, 9503, 9504, 10271 and 11725) revealed that mark numbers are indicated on drawings, Valve Marker Tag Tabulation Sheets (47A366) and some 575s (Storeroom Requisitions). WP9457 revealed that the valve mark numbers were used to identify the valve for material identification on the Weld Data Sheet. Further Review of WP9457 Revealed that the Bill of Material, Valve Data Sheet and Valve Tag Tabulation Sheet were included in the WP to assist the inspector in assuring that the proper valve was installed. However, the remaining WPs listed the valve serial number on the Weld Data Sheet for material identification.

A review of seven SQN site initiated purchase requests revealed four purchase requisitions (339155, 359446, 350196 and 350214) in which a TVA mark number was not indicated in the description of the valves being procurred. Two purchase requests, 365656 and 372011 referenced the original contract in which the valve mark number was indicated on the documentation associated with the original contract attached to the purchase request. One contract, 320035, used a mark number in identifying the service for which the equipment was designed on the NPV-1 Form (N Certificate Holders Date Report for Nuclear Pumps or Valves).

A review of the Power Stores material listing revealed that valves were not identified by mark numbers. Valves were identified by the TVA Item Identification Code number (TIIC), location and a complete description. |R3

Conclusion:

Through a review of the aforementioned procedures and interview with DNE, Modifications, Mechanical Maintenance and QC welding personnel, it was determined that valve mark numbers are not required for the identification of valves at installation. However, mark numbers are used by DNE upon purchasing valves for plant modification and are used by the modification engineers to assure the valves are as required. Mark numbers are used to reference the valve to a drawing, Bill of Material, valve data sheet and also the procurement document for verification purposes. Mark numbers are used throughout WPs in several places, such as 575s, TVA drawings, Tabulation Sheets and in one case observed on the Weld Data Sheet (see Section IV.1). Mark numbers are not required, per SQN procedures, for verification at installation for valves. Procedures are in place to ensure the correct valve is installed (without the use of mark numbers). The findings of this report are in concurrence with the findings in SQN Generic Task Force Report (EX-85-181-001, Revision 1, which addresses the portion of the concern evaluated in this report.

4.3.2 Generic - BLN (Class B)

A review of Revision 7 of QCP 6.9, "Valves," implementing the method used to inspect and document the installation of valves in piping systems, found that attachment A of the procedure, "Valve Installation Inspection (Test 82) Card," is required to be initiated by the responsible engineering unit for all valves requiring inspection at installation.

Section 6.1.1 of QCP 6.9 requires the responsible engineering unit to provide the bill of material number along with the mark number and other information such as applicable drawings, manufacturer type, and code class.

Section 6.3 of QCP 6.9 requires the Mechanical Quality Control Unit (MQC) or Instrumentation Quality Control Unit (IQC) inspector, as applicable on attachment A, to verify that the correct valve is installed and the valve has the required identification. The inspector verifies manufacturer and type, mark number, code class, and records serial numbers for code and ANSI B31.1 valves.

Section 7.0, "Acceptance Criteria," subsection 7.1.7 requires the valve to be properly identified and correspond to the valve specified by the bill of material or applicable contract. This requirement was initially implemented in Revision 0 of QCP 6.9 dated July 12, 1977.

Interviews with engineering personnel revealed that information provided on Attachment A (Valve Installation Inspection [Test 82] Card) is obtained from several documents such as the applicable drawing, bill of material, valve data sheet, and the design criteria diagram.

Interviews with QC personnel revealed that the bill of material is used to verify valves at installation. Valves must have the corresponding mark number tag attached which is indicated on the valve inspection card. Valves without the required mark number or that have the incorrect mark number are not accepted by QC inspection personnel.

Conclusion:

Through review of the findings, it was determined that although valve mark numbers are required on code and B31.1 valves they are not essential to correctly identify the valves at installation. QC inspectors are required by QCP 6.9, "Valves," to use the applicable bill of material to perform valve installation inspection in which a detailed description is available to ensure the correct valve is installed.

The bill of material in some cases, refers to the valve data sheet in which a detailed valve description is available and is used to ensure the correct identity of the valve during installation.

4.3.3 Specific - WBN (Class B)

Reviewed QCP 4.10-9, Revision 7, Section 7.0, "Acceptance Criteria," subsection 7.1, and found that it requires the inspector to verify that mark number, type, size, and class corresponds to the data provided on attachment A of the procedure. This information is obtained from the applicable drawing by the responsible engineer and forwarded to the applicable QC unit for valve installation inspection.

It was also found that subsection paragraph 7.1.1, addresses situations where mark numbers do not appear on the valve and state that, "The valve must correspond to the bill of material description of valve data sheet for the mark number."

This evaluation revealed that site procedure QCP 4.10-9, revision 7, adequately addresses the concern that mark number tags, which do not appear on valves during installation, are identified by a cross-reference verification to the bill of material description of the valve data sheet by the responsible QC unit. Attachment A of QCP 4.10-9 controls the possibility of valve mark number tags being removed/ replaced by requiring QC inspectors to verify that the mark number attached to the valve corresponds to the mark number and valve description which is obtained from the applicable drawing by the responsible engineering unit.

Through physical tracking of ASME code valves, it was revealed that valves that do not have TVA mark number tags attached are tracked by the serial number on the "N" stamp tag or valve body. The Heat Code Serial Number Report Log states the applicable contract number by serial number for all code valves. This information is used to track the applicable documentation for valve installation verification.

It was determined by review that noncode valves without mark number tags attached can be verified by the applicable flow diagram drawing, mechanical drawing and bill of material.

Conclusion:

Valve mark number tags are not essential for valve identification/installation verification purposes but are required according to site procedures, for inspection purposes.

4.4 Structural Steel

4.4.1 Generic

Not Applicable

4.4.2 Specific - WBN (Class B)

It was found that NQAM Part III, Section 2.2 Subparagraph 4.6-E, "Identification for Storage," requires Power Stores Section to establish an identification system where by the association between any Critical Structures, Systems and Components (CSSC) material, component, or spare part and its QA documentation is maintained. As a minimum, this system shall include the Material Management Systems (MAMS) Item Identification Code for stock items, contract number, or procurement document number for QA Level I and II items; applicable manufacturer's heat, lot, or individual serial number; and the ECN or DCR number as applicable for modification items. Items and containers shall be plainly marked in a manner not deleterious and which can be easily identified.

A review of ONP contracts and Purchase Specification WB4.12 for ASME and ASTM structural steel revealed that contracts are in accordance with Purchase Specification WB4.12. ASME material with nominal cross sectional areas of more than two square inches requires manufacturer certified material test reports with heat number traceability to the material. ASTM structural material shall be clearly marked or tagged indicating the ASTM specification number and a means of traceability to the certificate of conformance and does not require heat traceability.

A review of Power Stores structural steel storage area and applicable contracts revealed that heat traceability for ASME material was maintained as required. ASTM material was also found to be traceable to the certification by the contract and the TVA Item Identification Code (TIIC).

Through observation of the modification area and conversation with construction and ONP Modification Section employees, the location of the Modification outside storage area called the "rack' by employees could not be located.

Conclusion:

This concern was also addressed in NSRS Report I-85-146-WBN. The MA storage area of the concern could not be identified by the investigator at the time of the investigation. Fabrication storage areas for the modification department were observed by NSRS. These areas were exempt from maintaining traceability by WBN for level II material.

Structural material stored in Powers Stores ONP storage areas were traceable to its applicable certification documentation as required by NQAM Part III, section 2.2, paragraph 4.6-E. Level I structural materials (ASME) were traceable by heat number as required by contract specifications. Level II structural material (ASTM) were traceable by contract number and TIIC and does not require heat traceability. |R3

The concerns in this issue were valid because ASTM A36 structural steel material without heat traceability was stored in Power Stores warehouse area. This material complies with the required traceability markings for A36 material through use of the contract and unique identification code and does not violate procedures or present a condition adverse to quality.

4.4.3 Specific - BLN (Class B)

A review of ANSI N45.2.2-1972, "Packing, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants," Section 5.6., "Marking," indicates that required marking shall be verified to provide positive identification during receiving, storage, and installation.

A review of BLN's NQAM Part III Section 2.2, Revision 0, "Receipt Inspection, Handling, and Storage of Material, Components , and Spare Parts," Subsection 5.4, "Storage," Paragraph 5.4.6.5 "Identification for Storage," indicates: "The Power Stores Section shall establish an identification system whereby the association between any CSSC material, component, or spare part and its quality assurance documentation is maintained." As a minimum, this system shall include the MAMS TVA Item Identification Code (TIIC) for stock items; the ECN or DCR number as applicable for modification items; the contact number or procurement document number for QA Levels I and II items, and applicable manufacturer's heat, lot, or individual serial number.

Standard Practice BLA 9.4 "Storage of Procured Material," Revision 8, "Scope," indicates that the requirements for the procedure apply to all material to be stored by Power Stores from the time of receipt by Power Stores to the time of issue and, additionally, to the time of use if lengthy storage is required in plant areas. Paragraph 1.4.1, "Identification for Storage," indicates that Power Stores shall establish an identification system whereby the association between any CSSC material, component, or spare part and its quality minimum, shall include the following: MAMS TIIC, the receipt date for QA Level I and II items; applicable manufacturer's heat, lot, or individual serial number.

A review of Standard Practice BLM15, "Onsite Fabrication, Inspection Use of Replacement Parts," Revision 0, Paragraph 1 requires the cognizant engineer to perform a quality evaluation of the part to be fabricated. This evaluation shall be a statement of the design features of the part, and should include material evaluation, including applicable ASTM/ANSI specification, material test reports, and heat numbers. This information must be obtained from the original equipment manufacturer or supplier, TVA or Vendor drawing, and or analysis of the original part or an undamaged part used in the same application on an identical component. Paragraph 3 states that TVA form 575N will provide traceability of stock material used to fabricate QA Level I, II, III or IV parts.

Observation of Power Stores storage area revealed that no structural steel material is presently in stock.

Observation of the ONP Machine Shop area storage racks revealed that various shapes of structural steel material were stored that did not have any of the required identification markings stated in paragraphs D through G of the Summary of Findings in this report. This material was not traceable to its procurement document by means of physical markings or accompanying documentation (575N, etc.). The material was not labeled as CSSC or non-CSSC. It was apparent that the unmarked steel was the remaining pieces of structural steel which had been divided and only partially used in the fabrication of components.

An interview with the QA Inspector involved in the inspection of onsite fabrication of components revealed that the transfer of material heat numbers had been performed in the fabrication of CSSC components and that very few CSSC components had been fabricated in ONP. The inspector stated that he was aware that material heat number transfers were necessary in order to maintain the quality of structural steel. However he was not aware of any implementing site procedure requiring the transfer of heat number when steel is divided and placed in field storage for use at a later date.

Interviews with a ONP Mechanical Engineer and the ONP Mechanical Engineering Supervisor revealed that they were not aware of any site procedure which implemented the requirement for transferring heat numbers or material identification to divided unused pieces of structural steel during fabrication of CSSC components.

Conclusion:

Structural steel material stored in the ONP Machinist Shop storage rack was found not to have material identification or heat/lot numbers. Therefore the material is not traceable to the procurement document by physical markings or associated documentation (575N) as required by the supplier tier document or site procedures (NQAM Part III Section 2.2, Standard Practice BLA 9.4, and ANSI N45.2.2). It was apparent that some of the pieces observed were the remaining pieces of standard lengths of structural steel which were partially used for the fabrication of CSSC components. These pieces of structural steel could not be used for the fabrication of CSSC components, because the use of nontraceable material is prevented by the implementation of procedure BLM-15, ("Onsite Fabrication Inspection, and Use of Replacement Parts"). Although, BLM-15, does not require the transfer of heat number to the unused portion of steel. The procedure does require that the cognizant engineer perform a quality evaluation of the material and that TVA form 575N provide traceability of stock material used to fabricate QA Level 1, 2, 3 or 4 parts.

4.5 Tube Steel

4.5.1 Generic

Not Applicable

4.5.2 Site Specific - WBN (Class B)

It was determined through an interview with a warehouse individual that tube steel in the warehouse yard is segregated by size and heat number. The tube steel has a wire around the lot with a metal tag on a wire with heat number and other data stamped on the tag. In every lot, one piece of tube steel has a heat number stamped on the steel. When the tube steel is issued from the warehouse, every piece of tube steel that is taken from that lot is stamped with the heat number of the correct lot, with a QC unique stamp, to verify the transfer of the heat number to each individual piece of tube steel.

Interviews with cognizant individuals (foreman, engineer, warehouseman, and craftsman) were performed to determine if there exists specific examples of storage areas where material is stored without heat numbers. The interviews revealed that traceability on material in the field is not maintained to installed location for Level II material.

Unmarked steel in the field is determined to be Level II ASTM A-36 steel. Level I material is to be maintained in the field with the heat number on the material.

It was determined that maintenance of the heat number on Level II material is not necessary according to General Construction Specification G-36 and material is determined to be acceptable QA material because all tube steel is procured from QA vendors with certification documentation.

Conclusion:

The evaluation revealed that material traceability and segregated storage are maintained in the warehouse for tube steel. After Level II tube steel (hanger material) is issued from the warehouse and goes to the field, the traceability is not maintained and this is an acceptable practice.

4.6 Black Iron Pipe/ERCW

4.6.1 Generic

Not Applicable

4.6.2 Specific - WBN (Class A)

A review of, 10 CFR 50 found that Appendix B, Criterion VIII, "Identification and Control of Material, Parts, and Components," requires measures to be established to identify and control material, parts, and components to prevent the incorrect use of these items.

A review found that, ANSI N45.2.8-1975, section 4.4 required inspection of the work areas and that the work in progress be performed to verify that mechanical items are being located, installed, assembled and connected in compliance with the latest approved for construction drawings, manufacturer's instructions, code, installation instructions, and procedures. Inspection of the material shall include identification of material.

A review found that, WBFI M8, Revision 30, instruction for "Preparing Documentation of ASME Code Systems," required Field Weld Operation Sheets be initiated by the responsible engineering unit with an identifying weld ID number, and the identity of components and/or subassemblies to be joined.

A review of approximately 35 Field Weld Operation Sheets for units 1 and 2 for the Essential Raw Cooling Water System (ERCW) outside pipe run revealed that Field Weld Operation Sheets contained the vendor subassembly serial number.

A review found that ERCW NPP-1 forms were retrievable by the subassembly serial number which were indicated on the Field Weld Operation Sheets. The NPP-1 forms reviewed reflected the vendor assigned heat number for each piece of pipe used in the vendor-supplied subassembly.

Conclusion:

ERCW Piping was traceable by subassembly serial number, to installation. Material can be traced to its final installation location by cross-reference of the TVA assigned weld number on the Field Weld Operation Sheet to the corresponding weld number on the TVA sketch drawings and weld identification number on the ERCW piping layout drawing. ERCW piping subassemblies were also traceable to their certification documentation by means of the Field Weld Operation Sheet. The Field Weld Operation Sheet indicated the serial number of the vendor subassembly by which the NPP-1 forms applicable to the subassembly are retrievable. The NPP-1 form indicates each pipe heat number used in the subassembly. Other information pertaining to the heat number can be obtained through use of the Retrievable Information and Material Systems (RIMS) program.

Because the ERCW outside pipe run is buried, visual observation could not be performed to determine if heat numbers were marked on piping. It was apparent through a review of associated Field Weld Operation Sheets and NPP-1 forms that traceability was maintained by serial number. Verification of material quality can be determined through review of certified material test reports. Traceability of material to installation by serial number is acceptable and meets the requirement of 10 CFR 50 Appendix B, Criterion VIII and ANSI N45.2.8-1975.

4.7 Small Code Items

4.7.1 Generic

Not Applicable

4.7.2 Specific - WBN (Class D)

A review of TVA General Construction Specification G-53, Section 2.2, "Identification and Markings," found that all bolting material is required to be marked for identification by the manufacturer or supplier in accordance with the applicable specification and grade of material. If no identification marks are provided, a marking symbol or code may be used which identifies the material with the material certification. All bolting material furnished with a CMTR shall be identified by a heat code or number when required by the material specification or code and any additional markings required to facilitate traceability.

Section 2.2.3 of General Construction Specification G-53 was found to state that bolting material furnished with a Certificate of Compliance (COC) shall not require heat code traceability.

Appendix A of G-53 required that ASME bolting class 1, 2, and 3 equal to or less than 1-inch nominal diameter shall be marked in accordance with the material specification; however, heat traceability is not required unless it is a material specification requirement. Appendix F to G-53 was found to tabulate the identification marks for commonly used bolts, nuts, and washers.

A review of article NB2000, Material of ASME Section III, 1971 edition, through summer 1973 addenda, "Rules of Construction for Nuclear Power Plants Components," found Section NB-2130 to indicate that for pressure-retaining material, 3/4-inch nominal pipe size and less and bolting 1-inch nominal diameter and less, material manufacturers provide COCs with the material report. Section NB-2151 was found to require the identification of pressure-retaining material by the manufacturer to consist of marking the material with the applicable specification and grade of material, heat number or heat code of the material, and additional markings required to facilitate traceability of the reports of the results of all tests and examinations performed on the material.

A walkdown of warehouse storage area hut 28 for control and traceability of code fittings found random 3/4-inch and smaller fittings consisting of 15 lots of material. All lots observed were marked with material specification, grade,

size, heat number/code and working pressure. Material was also tagged to indicate ASME specification. ASME bolting material observed 1-inch nominal diameter and less were found to have the required marking as stipulated in G-53 Section 2.0. Twelve lots of bolting material were observed.

Observation of steamfitter field storage area for pressure retaining material found that material is stored in bins without identifying labels or tags. Although the material is marked with the material specification, grade, size, heat and working pressure, it could not be determined if material was received or purchased for ASTM or ASME application. Therefore, the control and traceability of this material was not maintained (same heat numbers were found on both QA and non-QA procurements). (Subcategory 40400 addresses the generic applicability evaluation performed on material storage and handling at other TVA Nuclear Power Plants. This evaluation, 40500, identified only the specific problem at WBN in regards to storage of small code items.)

ASME Section III bolting material observed in field storage area (steamfitter) was marked as required according to G-53 Section 2.0.

Interviews with warehouse personnel indicated that all ASME code fitting and bolting material was stored in warehouse hut 21 and that material in hut 21 was issued for ASME Section III applications. Warehouse personnel stated that material inspectors verified the heat traceability and that the correct material was issued on code bolting material and bolting material 1-inch diameter and less was tagged by the warehouse clerk to indicate the material description, specification, and grade. Although not required by General Construction Specification G-53, Section 2.0, the heat number (if available) is also indicated.

The material inspector verified the required material marking was on the material and that the correct material was being issued before validating the attached tag. ASME Section III fittings were issued by warehouse clerks and material inspectors were inspecting code fittings for heat number validity and correct material upon issuance from the warehouse storage area to ensure that correct material and heat traceability requirements were maintained. Warehouse clerks indicated that an inspection of all material in hut 21 was made in 1985 by the Material Inspection Unit, all items in hut 21 were researched and determined to meet the requirements of ASME code material at that time.

An interview with material inspectors confirmed that inspections were performed on ASME bolting material upon issuance from warehouse storage. It was also confirmed that material inspectors did not inspect ASME pressure-retaining fittings upon issuance from warehouse storage. Material inspectors indicated that a complete inspection of material stored in warehouse hut 21 was performed in 1985 (the month could not be determined by the inspector) in which all material was determined to be ASME code.

An interview with a cognizant steamfitter indicated that he was unable to determine if fittings in the field storage areas were for ASTM or ASME Section III application when issuing from field storage.

Conclusion:

Control and traceability of ASME code fittings and bolting material in the warehouse storage was adequate. Control and traceability of bolting material in field storage area was adequate. The control and traceability of ASME Section III fittings (3/4-inch and smaller) was determined to be inadequate in field storage. This was found to exist during the evaluation and is being tracked through CATD 40500-WBN-02. See subcategory report MC-40400 for general evaluation performed for material storage and handling.

4.8 Stainless Steel Pipe/Material

4.8.1 Generic

Not Applicable

4.8.2 Specific - WBN (Class A)

Review of the 1974 ASME Boiler and Pressure Vessel Code, Section II, Part A, "Material Specification for SA-312 and SA-530," revealed each length of pipe (SA-312) shall be legibly marked with the following:

a. Manufacturer's name or brand.

b. The letters ASTM.

c. The specification number and grade.

d. Manufacturer's private identifying mark.

e. Whether seamless or welded.

f. For grades TP-304H, TP-321H, TP-347H, and TP348H, the heat number and heat-treatment lot identification.

Marking shall begin approximately 12-inches from the end of each length of pipe. For small diameter pipe which are bundled, the information may be legibly stamped on a durable tag securely attached to each bundle.

Review of WBN QCP 1.6, Revision 0, dated June 17, 1975, revealed that the Responsible Engineering Unit (REU) was responsible for verifying material identification markings upon receipt. In addition, REU witnessed and verified remarking and/or partial withdraws from material in bundles by the Warehouse Services Unit (WSU).

Review of QCP 1.50. Revision 0, dated April 5, 1982, revealed that Material Inspection Unit (MIU) was responsible for ensuring that heat numbers on material corresponded to the Certified Material Test Report (CMTR) and to apply a unique inspector stamp next to the factory-stamped heat number upon receipt and prior to issue. In addition, MIU was to witness the transfer of heat numbers and apply a unique inspector stamp:

a. To each piece of material removed from a bundle and issued.

b. To each segment of material prior to cutting. If transfer could not be accomplished prior to cutting the inspector witnessed the cutting operation and the transfer of the heat number to each piece cut.

After issue, the Responsible Inspection Unit (RIU) was responsible for the transfer of heat numbers or heat codes as specified above.

Interviews with warehouse clerks revealed that austenitic stainless steel code pipe was received with vendor identification markings, specification, grade, and heat number. These markings were repeated along the entire length of each piece of pipe. Upon receipt the warehouse clerks would etch the material identification and heat number on the pipe.

Interviews with experienced Material Services Unit (MSU) personnel revealed that austenitic stainless steel pipe was received with material identification and heat number marked the entire length of the pipe. Upon receipt the warehouse clerks would etch information on each end of pipe. MSU verified the information and applied a unique inspector stamp.

Interviews with experienced Mechanical and Welding Quality Control personnel revealed that they have always verified material identification and heat numbers prior to installation. They would not approve installation of austenitic stainless steel code pipe into a safety-related system without heat traceability. In addition, they had no knowledge of austenitic stainless steel code pipe with just a tag.

Walkdown of a random sample of warehouse and field storage areas revealed austenitic stainless steel code pipe had material identification and heat numbers the entire length of the pipe and was etched by the WSU.

Conclusion:

The perceived problems in this element report could not be validated. This evaluation did not reveal any cases where austenitic stainless steel code pipe had been received without the material identification and heat number marked on each length of pipe. The personnel interviewed could not recall using just a tag on austenitic stainless steel code pipe to verify material identification and heat traceability. In addition, this evaluation did not reveal any program changes in 1984 to cause an individual to be concerned about heat traceability on austenitic stainless steel pipe prior to or after 1984.

4.9 Level II Material

4.9.1 Generic

Not Applicable

4.9.2. Specific - WBN (Class B)

Criterion VIII of 10 CFR 50, Appendix B was found to state:

"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."

ANSI N45.2-1971, Section 2, Quality Assurance Program was found to state, in part. . .

Since items and services will differ in regard to relative safety, reliability, and performance importance, various methods or levels of control and verification may be used to assure adequate quality.

WBN Construction Specification N3G-881, Section 3.1, Subsection 3.2, paragraph 3.2.2.1 and 3.2.2.2 was found to contain the requirements for Level I and Level II material traceability as follows.

Level I materials required CMTR, traceability, and inspection documentation. Traceability of Level I material was required from the mill heat number to installation.

Level II material required material certification of compliance or traceability from mill heat number to segregated warehouse storage and inspection documentation.

G-36, paragraph 3.1.1 was found to state, in part. . .

Any material with a quality Level I designation shall have traceability to its final installation location. Traceability can be either by the actual heat number or by a unique identifier that can be traced back to the heat number.

All material with a Level II designation shall have heat or lot number traceability to segregated storage on site.

NSRS Report I-85-146-WBN was found to indicate that the Watts Bar program did not provide the traceability required by 10 CFR 50 and 10 CFR 21.

TVA's letter to Harold R. Denton dated March 20, 1986 (L44 860320 811), was found to address the concern for traceability on Level II material. TVA indicated that through the implementation of ANSI N45.2-1971 and the specific quality requirements of WBN Construction Specification N3G-881, requirements of 10 CFR 50, Appendix B, Criterion VIII and ANSI N45.2 were being met at WBN.

The letter further indicated that in the case of notification of defects under 10 CFR, Part 21 "Notifications," TVA has and will effectively respond to the notifications. The implementation of a requirement for identification of material to installation (for Part 21 purposes) will prevent the need for a large sampling effort. However, traceability to installation is an economic decision to be made by the owner and the safety of the plant is not degraded when traceability is implemented as defined in Construction Specification N3G-881.

Conclusion:

In review of the aforementioned documents, specification, and response letter, it is apparent that heat number traceability for Level II material is required only to segregated storage and is not required when material is designated for Level II use when requisitioned from storage areas. (No evidence was found to indicate QA Level II material ever required traceability and thus traceability requirements could not have been omitted since 1981.)

4.10 Requisitions

4.10.1 Generic - SNP (Class A)

WBN ECTG Element Report MC-40510 stated that QTC files indicated the concern was either a DNC or ONP concern.

Measures established in SQN Site Procedure AI-11, Section 8.0, control the altering and changing of site-initiated requisitions. Section 8.0, "QA Level Changes and/or Description Changes and/or Substitution," required that attachment 9 to the procedure be completed for QA Level changes, QA description changes, and substitutions. Subsection 8.1, "QA Level Changes and/or Description Changes, Paragraph B," During Procurement Cycle (Up to Receipt)," requires, that during the procurement cycle, changes shall not be made to approved procurement documents without the

review and approval of the originator's organization or designated plant procurement organization and the designated QA organization (s). This review and approval of changes shall be documented on the affected procurement document, or by signed correspondence of which a copy is filed with the record copy of the procurement document, or by using attachments 9 and 16 (as needed according to paragraph 8.2.1). Attachment 16, "Evaluation for Acceptability of Class 1E Substitutions," shall be completed and attached to attachment 9 for substituted equipment identified for use in a class 1E application.

A random review of site-initiated requisitions from April 8, 1985 through July 1, 1986, revealed four contracts (362725, 362791, 364203 and 364239) where changes had been made to approved requisitions. These changes were implemented by the completion of attachment 9 as required according to Site Procedure AI-11.

Note: This review encompassed the time period of which deficiencies were discovered and identified at WBN-ONP in the corrective action report initiated by V. L. Patuzzi on January 13, 1986.

Interviewed personnel from Electrical Maintenance, Mechanical Maintenance, Instrumentation , and Materials Unit's Designated Project Procurement Office (DPPO). As a result of these interviews, it was revealed that virtually no instances could be recalled where changes were made to revisions initiated by the units which would affect the quality of material received or work schedule. An interview with an Electrical Maintenance Section individual revealed that minor changes had been made to the quality levels of material by the Materials Unit (DPPO) on requisitions 376851 and 377154. In review of the aforementioned requisitions, it was found that the changes had been made by DPPO and a technical and QA review had been performed. This review was annotated on the requisition and is an acceptable practice according to paragraph B of section 8.1 of AI-11. An interview with an instrumentation engineer revealed that requisition 453114 had been changed by the Purchasing Agent (PA) without prior notification to the responsible site personnel. The initial requisition required a source inspection of the material before being shipped to the site. The contract indicated that no source inspection was required. Upon receipt of the material at the site, a Nonconforming Item form (NCI,

N2-86-228) was initiated indicating that a quality release source inspection was needed. (As a result of previously mentioned reviews and interviews this was determined to be an isolated occurrence).

Through review of WBN ECTG, Material Control Element Report MC-40510, "Requisitions," it was indicated by a Corrective Action Report (CAR) that problems involving the unauthorized changing or altering of requisitions by PAs did exist. The corrective actions taken by the Division of Purchasing (PURCH) regarding this matter were to reduce the number of PAs who purchase safety-related material from 75 to 23; to train and continue to periodically retrain the 23 PAs at the division, branch, and section levels as needed; and to develop a checklist for PAs and supervisors to use in ensuring that the QA manual requirements are implemented (reference TVA memorandum TOO 860304 718 depicting the corrective actions which have been taken in regard to the finding of element report 40510).

Conclusion:

Through research of requisitioning documentation and interviews with site personnel, it was determined that very few, if any, problems exist at SNP regarding the improper altering or changing of requisitions by site or PURCH personnel, although, one example of an improper change to a contract was identified and was determined to have been made by PURCH. The incident was identified by site personnel and cited by the QA Receipt Section. This condition did not present a Condition of Adverse Quality (CAQ). Other incidents of this kind were not identified.

4.10.2 Specific - WBN (Class C)

Information supplied by the QTC files, through the NRC custodian, identified this as either a DNC or ONP concern.

A review found that measures have been provided, in DNC Quality Control Instruction (WBN QCI-1.20) since September 25, 1980, and ONP Administrative Instruction (AI-5.1) since February 9, 1982, to ensure that changes to requisitions were properly made and documented.

Interviews with DNC personnel revealed only occasional minor problems resulting from typographical errors and/or oversight; however, several ONP problems have been identified

in QA Section Report OWB-B86-0003, sections II.1 and II.2. Item II.1 has been properly addressed by deviation report WB-DR-86-008, closed March 20, 1986. Item II.2 has been properly addressed by a CAR, which remains open.

Note: This subcategory addressed only the portion of concern WI-85-036-002 that states, "THE REQUISITIONS ARE BEING CHANGED OR ALTERED LATER." The remaining portions of this concern were addressed in Material Control Subcategory MC-40200, "Purchasing and Requisitioning."

Conclusion:

The ONP concerns seem to have occurred as a result of improper or inadequate training which has been addressed by deviation report WB-DR-86-008 and a CAR. However, it appears that uncertainty in the interpretation of the methods of authorizing procurement document changes as outlined in AI-5.1, R19, section 11.0, could have contributed to these procedural violations. Therefore, it is required to revise AI-5.1, to explicitly require changes to have prior concurrence of the procurement document originator or his designee. CATD 40500-WBN-03 was initiated to track this corrective action which was agreed upon by the Office of Nuclear Power in TVA memo T04 60627980.

4.11 HVAC Duct Support

4.11.1 Generic

Not Applicable

4.11.2 Specific - WBN (Class B)

A review of drawing 47A055-1A, Revision 7, found note 7 to state "QA required for miscellaneous steel supports, quality Level II, in accordance with DEC QCP 1.3, 4.8."

A review of drawing 47A915, Revision 2, found note 8 to state, "QA required for miscellaneous steel support," referred to WBN QCP-4.8, Note 10, indicating that a certification of compliance by the manufacture is required for all material.

A review of WBN QCP-4.8, "Inspection and Documentation Requirements for Mechanical Supports," found in section 7.3, subsection 7.3.1 to require verification that only certified materials were used. Traceability beyond the point of fabrication is not required except for integral attachments (items welded to the pressure boundary) to classes A, B, C, and D piping systems.

A review of bill of material 47BM050-1 indicated that COCs are required for all miscellaneous supports, and hangers, except full traceability is required for plate steel, carbon, ASTM A516, Grade 70 material. Typical support drawing 47A915-9-34, and-35 which requires the use ASTM of A516 grade 70 material indicates the use of TVA class Q piping, which does not require heat traceability to installation location.

A review of General Construction Specification G-36 found that section 3.2.1 required all material with a Level II designation to have heat or lot number traceability to segregated storage onsite.

Attachment L to G-36 indicates material that requires a certificate of conformance to be Level II material.

A review of Construction Specification N3G-881, "Identification of Structure Systems and Components, covered by the WBN Quality Assurance Program," revealed that subparagraph 3.2.2.2 indicated Level II materials require material certification of compliance or traceability from mill heat number to segregated warehouse storage.

Conclusion:

HVAC duct support systems at WBN are designated as Level II and do not require heat number traceability to in place storage location/installation.

4.12 Containment Vessel Plate Steel

4.12.1 Generic

Not applicable.

4.12.2 Specific - SQN (Class E)

A review of ECTG file XX-85-120-003 revealed NSRS Report I-85-865-SQN, "Improper Placement of Heat Numbers."

A review of the NSRS report revealed that the plates in question were installed in the summer of 1980. This information was provided by the foreman over the crew which installed the plates in question. A conversation between NSRS and individual E revealed the installation location of

the plates in question. Drawing 47W2500-35, Revision 13, "Mechanical Pipe Support Pads for Containment Liner," detailed the location of five steel support plates. Mark numbers 124 through 128 were welded to the unit 1 containment vessel liner for support of piping hangers. These plates were added by workplan 8434 to support piping in the ice condenser system. The work accomplished by the workplan, the foreman involved, and the timing of the work matches the information given by the CI.

A review of the workplan by the NSRS investigator was initiated and was found to contain the Quality Control (QC) Inspection Records for the welding of these five plates to the containment vessel. This information was found on pages 107 through 127 of workplan 8434. Although TVA construction procedures did require that heat numbers be attached to material used in the containment vessel structure construction, the procedure used by ONP outage and maintenance did not. Documentation traceability to installation is adequate. A TVA ASME code specialist indicated that this latter practice is an acceptable interpretation of the code. However, ONP procedures do require that the heat number for such material be traceable to its source material. Traceability for workplan 8434 was verified by the QC inspector and cognizant engineer when they signed the QC Inspection Record.

The NSRS report (I-85-865-SQN) concluded that, "This employee concern is not substantiated." The records of the work done to add five plates to the containment vessel in 1980 indicate that the heat numbers for the plates were checked by the QC inspectors and documented in inspection reports. There was no requirement to add heat numbers to the plates welded to the containment vessel in workplan 8434, and thus no requirement for QC inspection of heat number transfer. The differing requirements used in the construction of the containment vessels and what ONP used to add these pads are the result of acceptable interpretations of ASME code requirements."

Through review and verification of the NSRS report findings, the conclusions of the report were found to be adequate.

Review of drawing 47W2500-35, Revision 14, found that five support pads were installed on the interior containment vessel liner in 1980. The pads were identified by the drawing as mark numbers 124, 125, 126, 127, and 128 and located by azimuth and elevation. Pad azimuth and elevation are uniquely noted on the weld data sheets for each pad in workplan 8434. A review of workplan 8434 found the material storeroom requisitions (form TVA 575) indicating heat numbers for structural steel issued from Power Stores, and the QC weld data sheets which indicated the heat numbers for the five pads used. These numbers do coincide. The inspection records, found on pages 107 and 127 of the workplan, were signed off by the inspector for material verification and approved by the "cognizant engineer."

Telecon with the NSRS investigator revealed the name of the foreman indicated by the CI. It was also indicated by the NSRS investigator that the material used for the pad was questioned by the QC inspector for heat number traceability. During initial fabrication of the pads, QC questioned the validity of one of the heat numbers. It was discovered at that time that no ASME documentation was available for the steel. ASME documentation was obtained from the vendor at a later date and the material was verified by QC. This information was obtained from the foreman by the NSRS investigator.

Telecon with the crew foreman revealed that the responsible engineer would order material on a form TVA 575. The material would then be picked up at the Power Stores warehouse by the craft. At that time, the material would be taken to the machine shop for cutting (fabrication). QC personnel, at the time of fabrication, would transfer the heat number from the original piece of steel to the fabricated pieces. The foreman stated that he was sure that the material in question had heat numbers inscribed, and that the correct heat numbers are on the steel. He stated that the heat numbers may not be visible because the plates had to be pressed to meet the curvature of the containment liner. These plates could have been pressed, and the heat number could be against the containment liner.

* Editorial Note: The transfer of heat numbers from the original piece of steel to the fabricated pieces is not a procedural requirement.

Upon visual observation of the support pads, it was found that there was no evidence of heat numbers on pads 124, 125, 126, and 128, although indentations were observed on pad 127. Because of the thickness of paint, the number inscribed could not be verified.

A review of the certification documentation (CMTRs), for heat numbers 8013226 and 432E0141 recorded on the weld data sheets, for the 1-1/4-inch thick steel plate used for fabrication of the support pads found the material to be ASTM A516, grade 70 as required by note 1 of drawing 47W2500-35, Revision 14. This note says that, "All pad material shall be ASTM A516 Grade 60 or 70 carbon steel plate, level I, in accordance with SQN Construction Specification N2G-877." However, review of the CMTR for the 1-1/4 inch plate, heat number 7487540, which was also requisitioned from storage for use in fabrication of one of the pads in question, identified the material as being certified to ASTM A36 only. The CMTR also identified the purchase contract as 771841. Through review of the contract it was discovered that the material procured was ASTM A36.

A random review of all form TVA 575s on file for structural material, other than ASTM A36, requisitioned from storage from November 30, 1979, through January 8, 1981, was performed to determine if the correct material was issued and if the incident involving the issuance of incorrect material on form TVA 575, number 1256, was isolated or common. The review revealed that three heat numbers were issued other than the three mentioned in paragraph F that were structural materials other than ASTM A36. The storeroom requisitions (575s) involved the issue of ASTM A572 steel plate (HT 74Z0328), ASTM A240, type 304 stainless steel plate, and ASTM A588, Grade A plate. A review of the heat code sort revealed that the material was properly issued. Therefore, the issuance of incorrect material on form TVA 575, number 1256, was determined to be an isolated incident and was not determined to be generically applicable to all storeroom issues.

Conclusion:

a. No TVA requirement to place heat number on plates at fabrication or installation.

b. No TVA requirement for Quality Assurance to validate heat numbers.

c. During the concern evaluation, a side issue was identified. It was discovered that the incorrect type of structural steel, (A36) HT 7487540, was used for the fabrication of support pad mark number 125 (reference drawing 47W2500-35, revision 14, note 1).

This material was issued from the SQN construction warehouse as ASTM A516, grade 60 material. After review of the procurement and certification documentation, it was determined that the material was ASTM A36 and did not meet the material requirements of as-constructed configuration of the previously referenced drawing. (See Section 7.0 for corrective actions). This issue is being tracked through CATD 40512-SQN-01.

4.13 Loss of Material Identification

4.13.1 Generic

Not Applicable

4.13.2 Specific - BFN (Class A)

A review of NQAM Part III, Section 2.2, "Receipt Inspection, Handling and Storage of Material, Components, and Spare Parts Section" found section titled Identification for Storage to state: The Power Stores Section shall establish an identification system whereby the association between any CSSC material, component, or spare part, and its quality assurance documentation is maintained. As a minimum, this system shall include the MAMS TVA Item Identification Code (TIIC) for stock items; the ECN or DCR number as applicable for modification items; the contract number or procurement document number for QA Levels I and II items, and applicable manufacturer's heat, lot, or individual serial number. All items or their containers shall be plainly marked in a manner which is not deleterious to the item and so that they are easily identified without excessive handling or unnecessary opening of crates and boxes.

Section 5.7, "Surveys," requires that the Site Quality Manager's (SQM) organization perform and document periodic surveys of Critical Structures Systems and Components (CSSC) items in storage to ensure that appropriate identification and markings requirements are being effectively implemented.

A review of NQAM, Part III, Section 2.3, "Issuing of Material, Components, and Spare Parts," Section 2.0, "Procedures," Subsection 2.2, "Issue of Materials, Components, and Spare Parts for In-Plant Use," Paragraph 2.2.4 states that: Traceability shall be maintained for QA Levels I and II items and 10 CFR Part 21 applicable items not assigned a QA level. Subparagraph 2.2.4.3 states that: "When items are withdrawn from Powers Stores, the contract number shall be entered on the 575 form "(as a means of material traceability). Subparagraph 2.2.4.4, states that: "Each work instruction shall reference (by unique 575 number) the 575's used to withdraw material for that work."

A review of BFN Standard Practice BF 16.4, Revision 2, "Material Components and Spare Parts Receipt, Handling Storage, Issuing, Return to Storeroom and Transfer," Subsection 4.6, Paragraph E, found Identification for Storage to state: The Power Stores Unit shall establish an identification system whereby the association between any CSSC material, component, or spare part and its quality assurance documentation is maintained. As a minimum, this system shall include the MAMS TVA Item Identification Code (TIIC) for stock items; the ECN or DCR number as applicable for modification items; the contract number or procurement document number for QA Levels I and II items; and applicable manufacturers heat, lot, to individual serial number. All items or their containers shall be plainly marked in a manner which is not deleterious to the item and so that they are easily identified without excessive handling or unnecessary opening of crates and boxes.

NOTE: Review of the earliest revision level available dated November 28, 1979, indicated that this requirement was in effect at the aforementioned time period. Revisions earlier than November 28, 1979, were not available for review.

Subsection 6.2. Issuing Material, stated that:

The Power Stores Supervisor is responsible for the issue of all material, components, and spare parts. Following the issuance of an item, the responsible supervisor is responsible for the following:

a. Care of the item to prevent degradation or damage prior to and during installation.

b. Indicating the form TVA 575D or 575N number on the applicable work instruction or the TVA contract number in accordance with BF 8.3 for QA Level I, II, and ECN material procured by OE to which QA requirements or 10 CFR Part 21 applies.

NOTE: When CSSC items are withdrawn from Power Stores and not immediately installed or staged for future installation, the responsible supervisor shall ensure that the items are stored and maintained in an environment equal to or greater than the level of storage required by reference 20 of this procedure.

An approved storeroom requisition, TVA Form 575D or 575N, is required to obtain any item on inventory from the storeroom. Only those people authorized by a responsible supervisor (on TVA Form 1733) may approve a storeroom requisition. The person requesting material will deliver an approved TVA Form 575D or 575N to the stores clerk with the following information supplied:

a. Description of the item requested (as applicable; the manufacturers part number, specification, class, size, etc. shall be included to provide positive identification for the material, component, or spare part requested on the storeroom requisition).

b. Quantity desired.

c. Component and system in which the item is to be used.

d. CSSC or non-CSSC.

e. Working document (one of the following numbers will be noted - maintenance request number, maintenance instruction number, modification work package number, ECN number, or for general plant use).

Power Stores personnel shall verify that this information is included on the TVA Form 575 prior to issuing the requested materials.

For QA level I and II, the Power Stores supervisor will have added, as a minimum, to the form TVA 575D or 575N the following information to provide material traceability:

a. Form TVA 575D or 575N Issue Activity number.

b. TVA Item Identification Code (TIIC) number for inventory items.

c. As applicable, manufacturer's heat, lot, part,or individual serial number.

d. The procurement document and item number.

When cable is removed from a reel before issue, the cable will be conspicuously tagged with the TVA reel number. This marking will be verified by a QC inspector who will sign and date the tag verifying the information on the tag is correct.

For QA Level I and II, a copy of the form TVA 575D or 575N shall be supplied to the individual withdrawing the item for attachment to the applicable work document.

It is the responsibility of the user of the materials, components, or spare parts to verify correct identity before installation. When item identification or traceability to acceptance documentation is not maintained, a nonconformance is implemented in accordance with procedure BF-165.

NOTE: Through review of the earliest available revisions, the requirements of this procedure were implemented January 23, 1979.

A review of Technical Specification TS 01.00.15.14.03, Subsection 3.5.1, "Identification for Storage", was found to state that Power Stores shall establish an identification system whereby the association between any CSSC material, component, or spare part, and it's quality assurance documentation, is maintained.

As a minimum, this system shall include the MAMS TVA TIIC; the contract number or procurement document number (for QA Level I and II items); and applicable manufacture's heat, lot, or individual serial number.

A random observation of the Power Stores material storage area revealed that the material was identified by TIIC, contract number, item number, Quality Level (Level I and II), and applicable heat/lot as required by the aforementioned site procedures and upper-tier documents.

A random sample of storeroom requisitions (575) for QA material issue from 1979 through 1986 revealed that (CSSC) QA material was traceable to the procurement documentation by TIIC numbers and contract/procurement document numbers.

However, it was discovered that numerous 575's did exist in which all the required information of Standard Practice BF 16.4 was not provided by the requests of the Power Stores Unit (for example: the working document number and contract item number). However, the failure to not fully comply with the procedure did not hinder the ability to trace the material to its procurement document.

A random observation of BFN's completed QA workplans from 1979 through 1985 revealed that a copy of the 575 used to purchase material for the workplan was included in most packages. However, three workplans were reviewed where all 575s for the material were not included, but the workplans did include vendor documentation/certification and BFN Form BF-185, "Material Traceability List", in which material was traceable to the procurement document/contract.

Conclusion:

It has been determined through this evaluation that upper-tier and site procedures are inplace governing the identification of material while in storage, during issuance and at installation. Material in storage is identified by the means required in the governing documents and is traceable from issuance to installation by documentation included in the workplan. [However, traceability at installation to the procurement document is sometimes not maintained by use of a storeroom requisition (575) which is required by the NQAM and Standard Practice. The material is traceable by vendor documentation or other plant documentation (BF-148, Material Traceability List) included in workplan.] It was also discovered through the random review of the completed 575s initiated for the requisitioning of permanent material, that instances did exist where the 575 did not state the purpose for which that material was to be used and the contract item number which is required by site procedures. However, this does not effect the traceability of the material. This concern could not be validated because material traceability was maintained through other documentation included in the WPs which indicated the material identification.

4.14 Quality Material

4.14.1 Generic

Not Applicable

4.14.2 Specific - WBN (Class A)

Through review of Construction Site Procedure QCI 1.36, "Storage and Housekeeping," and ANSI N45.2.2, 1972, it was discovered that a requirement to identify material in storage as Q material did not exist for the Division of Nuclear Construction (DNC).

Interviews with the Material Services Unit (Receipt Inspection) Head Inspector and the Chief Storekeeper revealed that a requirement to identify material as Q did not exist. Although the material stored at the warehouse area is identified, this is done as a good warehouse practice.

Observation of material stored in the construction area revealed that material was identified as QA and non-QA-related.

A review of ONP site procedure Administration Instruction AI 5.6," Storage Handling and Shipping Requirement for Watts Bar Nuclear Plant," Section 3.5," Identification and Marking." Paragraph 3.5.1, Identification for Storage, requires the identification and segregation of items assigned Level I and Level II QA surveillance by using Quality Stores Ledger Cards (TVA Form 6124B) and a Bin Description Card (TVA 6059A) to denote that quality assurance requirements and assignments have been made for that item.

Observation of material stored in the ONP Power Stores storage area revealed that material is identified as Level I or II on TVA Form 6509A, which is attached to the material. Level III and non-QA material is also tagged and identified.

Conclusion:

The concern was not validated. Although the identification of stored material by the DNC as Quality is not required, stored material in DNC is identified as such. The practice is considered as a good warehouse practice.

ONP procedures do require material to be identified and segregated as QA Levels I, II, III and Non-QA. Material stored by DNC is identified or required.

Material Traceability is not effected when material is not identified as QA or Non-QA in storage. The quality status of the material can be determined through review of the contract. The contract number is indicated on the material or on tags affixed to the material. |R3

4.15 Black Pipe

4.15.1 Generic

Not Applicable

4.15.2 Specific - WBN (Class A)

Review of the ECTG files revealed a response to the concern from Watts Bar DNC. The response is that the traceability requirements are covered by QCP 1.50, "Material Verification and Validation." This procedure provides for transferring the heat numbers and states that the responsible QC inspector must verify the transfer before the QA traceable pipe is cut.

If this verification does not take place the pipe cannot be used in a QA application. However, it can be used for lower grade (non-QA) pipe installation. The pipe does not have to be discarded if no heat number is available.

Review of QCP 1.50," Material Verification and Validation," identified that the responsible QC inspector is required to validate heat code transfer traceability information. Section 6.2.2 requires that before separation it is verified that each piece of material, bundle, assembly, or component to be segmented, sectioned, or disassembled is identified with the correct traceability identification. Section 6.2.3 states that if

transfer of the traceability identification cannot be performed before disassembly or sectioning, then QC must witness the separation and verify correct transfer of the traceability identification after disassembly or sectioning. Section 6.2.4 states, "Apply the inspector's unique identification symbol adjacent to each transferred traceability identification."

An interview with the Material Service Unit Lead Inspector indicated the Black Pipe (Code, ASME) received in 1983 was stamped with heat numbers on each end of the pipe and the heat number was validated by the Receiving Inspectors by applying the inspector's unique identification symbol.

An interview with the Chief Store Keeper indicated that pipe (code) was stamped with the heat code on both ends of the pipe. He indicated that this practice started in 1982.

A definite date for the implementation of the practice of stamping and validation of pipe on both ends could not be established. Although interviews indicate the time period of between late 1982 and early 1983.

Review of revision 0 to QCP 1.50 dated April 5, 1982, Section 6.2.1, requires the Responsible Inspection Unit (RIU) witness the transfer of heat numbers or heat codes as specified in paragraph 6.1.3 (stating the Material Inspection Unit (MIU) witnesses the transfer of heat numbers and applies a unique inspector stamp as follows):

"6.1.3.1 To each piece of material to be separated from a bundle."

"6.1.3.2 To each segment of material prior to cutting. If transfer cannot be accomplished prior to cutting the inspector witnesses the cutting, operation and the transfer of the heat number to each piece cut."

Conclusion:

Procedures are inplace (QCP 1.50) that require the verification and validation of heat number transfers of ASME Heat Traceable Piping when divided. However, when heat numbers are not transferred, the material is used for Non-QA application. Piping material requiring heat traceability is stamped on both ends of the pipe and validated by the responsible unit (MIU) during receipt.

The waste portion of this concern is addressed to Management and Personnel Subcategory 71100

5.0 COLLECTIVE SIGNIFICANCE

5.1 Significance of Issue

Fifteen issues comprising 18 employee concerns have been evaluated and discussed in this report. Of these, only two issues were substantiated (found to be violations of procedures, requirements or standards that existed when concerns were registered) and require corrective action. One side issue was identified that required corrective actions.

The results of this evaluation are summarized in table 5-1A. The issue name used throughout the report is given in the first column on the left under issue. A brief description of the issue is given in the second column from the left. The associated TVA procedures, requirements and standards are cited in the next column. The cited references are given in table 5-1B. In the last issue, "Black Pipe," no references are given because the concern was based on economics and not safety. Whether or not the issue was validated or substantiated, comments and corrective actions are given in the remaining columns when clarification or amplification is needed.

TABLE 5-1A
SUMMARY OF ISSUES IN MATERIALS IDENTIFICATION

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
1.	ASTM A-307 Bolts	Installed w/o manufacturer's ID & no storage separation	1a to 1h	yes	no	C/A taken before evaluation.	The unmarked ASTM 307 material was tested and found acceptable.
2.	Austenitic SS	Use of unapproved marking mat'ls.	2a to 2c	yes	yes	QCP 4.10.11 was not followed resulting in a substantiated finding.	An NCR (NCR #6870) was issued by TVA for this issue. Corrective action is pending approv. & disposition of NCR. (CATD 40500-WBN-01)
		Color code program for ID not used		no	no	No site procedure governing Color Code	None required.
3.	Valve (Test 70)	Mark no. tags can be easily removed jeopardizing the ID of the valve.	3a to 3i	yes	no	The tags are not essent. or reg'd for valve ID. Valve Ser nos. may be used for valve ID.	None required.

a. See "Reference to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.
b. Factual - Yes means the concern has been observed.
c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

TABLE 5-1A
SUMMARY OF ISSUES IN MATERIALS IDENTIFICATION

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
4.	Structural Steel	Structural steel is not marked with heat no. and/or code in Nuclear Power Stores.	4a to 4f	yes	no	QA Level II Struct. Steel was found w/o makings, but there are no requirements for this QA Level to have them.	None required.
5.	Tube Steel	Heat nos. are not scribed on the tube steel hangers	5a	yes	no	Hear no's not required on hangers except integral attachments	None required
6.	Black Iron Pipe/ERCW	The black iron outside pipe run has no heat numbers stamped on it.	6a to 6c	no	no	The pipe is buried in the ground & therefore could not be inspected. However, heat nos. are traceable with piping assy. ser. nos. on weld data sheets & NPP-1 forms.	None required

a. See "Reference to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.
b. Factual - Yes means the concern has been observed.
c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

TABLE 5-1A
SUMMARY OF ISSUES IN MATERIALS IDENTIFICATION

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
7.	Small code Items	Small code items are not properly ID'd and marked for ASTM and ASME Specs, heat no. or code working press., etc. & are not stored in segregated areas. Traceability of this data from the material to the mfr. does not always exist.	7a to 7c	yes	yes	Control and traceability of ASME Code fitting and bolting material in the warehouse & storage areas found to be adequate. However, small code fittings were not segregated in storage steam-fitter storage or not properly ID'd.	An NCR (6834) was issued by TVA and corrective action is pending approval and disposition of the NCR. (CATD 40500-WBN-02)
8.	Stainless Steel Pipe/ Material	No heat no. is stenciled and/ or scribed on the pipe Inadequate storage practices.	8a to 8c	no	no	None	None required

a. See "Reference to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.
b. Factual - Yes means the concern has been observed.
c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
9.	Level II Material	Since 1981, heat nos. traceability has not existed for Level II material	9a to 9d	yes	no	Heat no. traceability not required for Level II material after issuance from warehouse storage.	None required
10.	Requisitions	Unauthorized changes are being made to purchase requisitions at a later date.	10a to 10c	yes	no	C/A taken before evaluation.	None required
11.	HVAC Duct Supports	HVAC duct supports exist in Reactor Buildings 1 & 2 without heat nos.	11a to 11e	yes	no	HVAC duct supports are fabricated from QA Level II mat'l which do not require heat no. traceability	None required

a. See "Reference to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.
b. Factual - Yes means the concern has been observed.
c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

TABLE 5-1A
SUMMARY OF ISSUES IN MATERIALS IDENTIFICATION

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
12.	Containment Vessel Plate Steel	The heat nos. on approx five plates could not be found	12a to 12c	no	yes	In an unrelated find. during the issue eval., an incorrect structural steel (1) plate (ASTM A36) was used in place of ASTM A516 for fabrication of a support pad. This unrelated incident is being evaluated further.	Initiated Deviation Report, DR-SQ-DR-86-185R. Verify material type through metallurgical testing. Initiate workplan to remove existing pad and replace with pad fabricated with the correct material if necessary. (CATD 40512-SQN-01)
13.	Loss of Material Identification	Storeroom requisition forms (575s) were found to have incomplete info. entered on them.	13a to 13e	no	no	Information not entered on 575's reviewed, did not prevent traceability of the material.	None required
14.	Quality Material	"Q" (Quality) grade mat'ls are not ID'd as "Q" while in storage.	14a to 14b	yes	no	There is no requirement for identifying "Q" material in storage for DNC. Requirements exist for ONP only.	None required

a. See "References to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.

b. Factual - Yes means the concern has been observed.

c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

	ISSUE	DESCRIPTION	ASSOCIATED PROCEDURES, REQUIREMENTS, STANDARDS(a)	FACTUAL (b)	PROBLEM (c)	COMMENTS	CORRECTIVE ACTIONS
15.	Black Pipe	The heat numbers for black pipe are on one end. When this end is cut off, the balance of pipe is discarded which is wasteful.	The subject of this concern was wastefulness, not safety. Therefore, no violations of safety were cited.	no	no	Concerns were not based on safety considerations.	None required

a. See "References to Table 5-1B" following this table for the procedures, requirements or standards corresponding & the reference number below.
b. Factual - Yes means the concern has been observed.
c. Problem - Yes means a violation of a procedure, requirement or standard has occurred.

TABLE 5-1B

REFERENCES TO TABLE 5-1A

1. a. ASTM A 307, "Carbon Steel Externally Threaded Standard Fasteners".

   b. 10 CFR 50 Appendix B. Criterion VIII, "Identification and Control of Material, Parts, and Components"

   c. TVA Topical Report 75-1A. Section 17.1.8.2, "Identification and Control of Material, Parts, and Components"

   d. G53, "Tennessee Valley Authority Construction Specification," Section 2.2, "ASME Section III and Non-ASME Section III (including AISC/ASME B31-1 and ANSI B31.5) Bolting Material, Identification and Marking"

   e. WBN Site Procedure QCP 1.41-3, Rev 5, October 17, 1985, "Structural and Miscellaneous Bolted Connections"

   f. TVA Memorandum, MEB 790608372, "Marking Requirement of ASTM A-307 Bolting"

   g. NSRS Report 1-85-161-WBN, "Unmarked Bolting Material," Revision 7

   h. WBN Site Procedure QCP 4.23-8, "Support Final Inspection"

2. a. G29 Process Specification, "Material Fabrication and Handling Requirements, Austenitic Stainless Steel" 4.M.1.1, Revision 9 and 4.M.4.1, Appendix B, Revision 4

   b. WBN Site Procedure QCP 4.10.11, Revision 5, Section 4.5, "Paint-Type Marking"

   c. Purchase Specification PF 1053, Marking Materials For Use On Stainless Steel and Corrosion Resistant Alloys", Revision 3, Section 2.0

3. a. SQN GCTF Evaluation Report, "Component Substitutions"

   b. Nuclear Quality Assurance Manual (NQAM), Part III, Section 2.5

   c. SQN M&AI-1, "Control of Weld Documentation and Heat Treatment"

   d. SQN AI-19, (Part IV Plant Modification: After Licensing, Revision 19

   e. SQN-SOP SQA-162, ASME Valve Parts, Appendix 2, Revision 5

f. SQN-SOP SQA-45, Quality Control of Material and Parts and Service

g. SQN MI-6.21, Repairs, Replacement and Fabrication of ASME Section XI components

h. BNP-QCP 6.9, "Quality Control Procedure, Valves", Revision 7

i. WBN QCP 4.10-9, "Valve Installation Inspection", Revision 7, Section 7.0, "Acceptance Criteria"

4. a. IBid. Reference 3b, Section 2.2, Subparagraph 4.6-E, "Identification for Storage"

b. "Nuclear Power Contracts and Specification", Standard Practice WB4.12

c. ANSI N45.2.2-1972, "Packaging, Shipping, Receiving, Storage, and Handling of Items For Nuclear Power Plants"

d. IBid. Reference 3b, Section 2.2, Revision 0

e. Standard Practice BLA 9.4, "Storage of Procured Material, Revision 8

f. IBid. Reference 4e, BLM 15, "On Site-Fabrication, Inspection, and Use of Replacement Parts", Revision 0

5. a. G-36, "General Construction Specification, Quality Levels of Structural Materials"

6. a. IBid. Reference 1b

b. 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"

c. WBFI M8, Revision 20, "Instruction for Preparing Documentation of ASME Code System, Required Field Weld Operation Sheets"

7. a. IBid. Reference 1d

b. IBid. Reference 1d, Appendix A

c. IBid Reference 6c

8. a. ASME Boiler and Pressure Vessel Code, Section II, Part A, "Material Specification for SA-312 and SA-530

b. WBN QCP-1.6, Revision 0 June, 1975, "Receipt, Inspection, Storage, Withdrawal and Transfer of Permanent Material"

c. WBN QCP-1.50, Revision 0, April 5, 1982, "Transfer of Heat Number"

9. a. Code of Federal Regulations, 10 CFR 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants"

b. ANSI N45.2-1971, "Quality Assurance Program for Nuclear Power Plants"

c. N3G-881, Construction Specification, "Identification of Structures, Systems, and Components Covered by the Watts Bar Nuclear Plant Quality Assurance Program"

d. Code of Federal Regulations, 10 CFR 21, "Reporting Defects and Noncompliance"

10. a. SQN Site Procedure AI-11, "Administrative Instruction Receipt Inspection, Nonconforming Items, QA Level/Description Changes and Substitutions", Section 8.0

b. WBN QCI-1.20, NUCON Quality Control Instruction"

c. WBN AI-5.1, "ONP Administrative Instruction"

11. a. IBid. 10b

b. WBN QCP-4.8, Revision 10, August 8, 1980, "Inspection and Documentation Requirements for Mechanical Supports"

c. IBid. Reference 5a

d. Bill of Material 47BM050-1

e. IBid. Reference 9c

12. a. ASTM A516/A516M-84, "Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate-And Lower-Temperature Service"

b. ASTM A36/A36M-84a, "Standard Specification for Structural Steel"

c. Tennessee Valley Authority Construction Specification N2G-877, "Sequoyah Nuclear Plant Quality Assurance Program," Revision 5, May 3, 1985

TABLE 5-1B (continued)

13. a. IBid. Reference 3b. See Sections 2.2, 2.3

    b. BFN Standard Practice BF 16.4, Revision 2, "Material Components and Spare Parts Receipt, Handling, Storage, Issuing, Return to Storeroom and Transfer"

    c. IBid. Reference 9d

    d. IBid. Reference 3b. See Sections 2.0, 2.2, 2.3

    e. BFN Technical Specification, TS 01.00.15.14.03, Subsection 3.5.1, "Identification For Storage"

14. a. IBid. Reference 9b

    b. WBN QCP 1.36, "Quality Control Procedure, Storage, and Housekeeping"

15. No references

5.1 Significance of Issues (con't)

The significance of the two factual issues and one side issue requiring corrective actions are discussed below.

5.1.1 Containment Plate Steel (Side Issue)

5.1.1.1 Management Effectiveness

No significance assigned.

5.1.1.2 Employee Effectiveness

The requirements for inspection of material to the storeroom requisition (575) prior to issuing material from warehouse storage areas were in-place to prevent the use of incorrect material in plant construction/modifications. The use of improper structural steel plate in the fabrication of the support pad was because of the inadequate DNC-Quality Control Inspection during issuance of the material.

5.1.1.3 Technical Adequacy

The technical adequacy of this issue can not be determined until the results of the metallurgical test are provided. |R3

5.1.2 Austenitic Stainless Steel (Factual Issue)

5.1.2.1 Management Effectiveness

The use of unapproved temporary paint markers was evident on stainless steel material in Reactor Building 2. Adequate QC procedures, requirements, and standards are in place; however, a greater effort should be made by management to implement these documents.

5.1.2.2 Employee Effectiveness

Adequate procedures, standards, and requirements were in place to prevent the use of unapproved markers on stainless steel material; however, more care should be taken by employees in understanding and following the instructions in these documents.

5.1.2.3 Technical Adequacy

Possibility of stress cracking in piping material where uncertified paint markings were used in which the operating temperature exceeds 200° F.

5.1.3 Small Code Items (Factual Issues)

5.1.3.1 Management Effectiveness

The lack of control and traceability of small code fittings in the Field Storage area (DNC - Steamfitter Storage Trailer) is because of:

a. Failure to identify the need for segregation and traceability of small code fittings after issuance from warehouse storage.

b. Failure to implement procedures requiring segregation of small code fittings in field storage.

c. Failure to communicate to craft personnel the importance of material control and traceability for small code fittings. |R3

5.1.3.2 Employees Effectiveness

No significance assigned.

5.1.3.3 Technical Adequacy

No significance assigned.

5.2 Collective Significance of the Subcategory

5.2.1 Management Effectiveness

No collective significance assigned.

5.2.2 Employee Effectiveness

No collective significance assigned

5.2.3 Technical Adequacy

No collective significance assigned.

6.0 CAUSES

The following is a Summary of the causes of those findings which require corrective actions.

6.1 Containment Vessel Plate Steel (this was identified as a side issue)

6.1.1 Generic

No Generic causes were determined

6.1.2 Specific (SQN-ONP)

Quality Assurance Management's failure to recognize the need for a more effective means of verifying material identification at fabrication and installation.

6.2 Austenitic Stainless Steel

6.2.1 Generic

No Generic causes were determined.

6.2.2 Site Specific - (WBN-DNC)

The use of unapproved temporary paint markers on stainless steel was apparently the result of:

a. Inadequate training, to the existing site procedure, of personnel responsible for the procurement and use of temporary markers.

b. Inattention to procedural detail by the user of temporary paint markers.

c. Inadequate communications between craft personnel and line management regarding the approved/certified markers to be used.

d. Unawareness of Engineering/Craft management as to the approved/certified marker to be used on stainless steel material.

6.3 Small Code Items

6.3.1 Generic

No generic causes were determined.

6.3.2 Specific (WBN-DNC)

The lack of control and traceability of small code fittings stored in the field storage (DNC-Steamfitter Storage Trailer) is a result of craft management's failure to recognize the need for a procedure requiring the control and traceability of small code items in field storage areas. |R3

7.0 CORRECTIVE ACTIONS

Required Corrective Actions Already Taken or Planned for the following issues are discussed below.

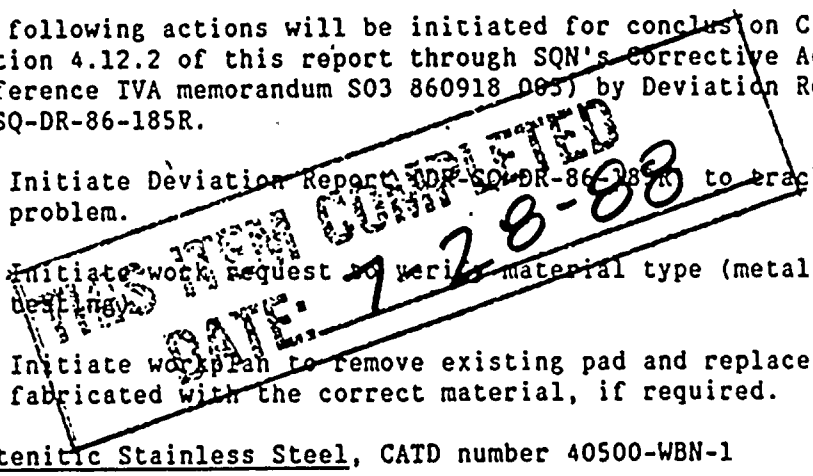
7.1 Containment Vessel Plate Steel, (this was identified as a side issue) CATD number 40512-SQN-1

The following actions will be initiated for conclusion C of section 4.12.2 of this report through SQN's Corrective Action Plan (reference IVA memorandum S03 860918 005) by Deviation Report, DR-SQ-DR-86-185R.

a. Initiate Deviation Report SQDR-SQ-DR-86-[illegible] to track potential problem.

b. Initiate work request to verify material type (metallurgical testing).

c. Initiate work plan to remove existing pad and replace with pad fabricated with the correct material, if required.



7.2 Austenitic Stainless Steel, CATD number 40500-WBN-1

NCR 6870 was initiated by the Division of Nuclear Construction to identify the issue regarding the use of unapproved temporary paint markers on stainless steel material.

The following actions will be initiated as a result of the Findings in section 4.2.2 through WBN's Corrective Action Tracking Document, 40500-WBN-01 (reference TVA memorandum T41 870216 909).

a. Remove all temporary markings from stainless steel material in accordance with NCR 6870 R3 and NCR 6821.

b. Revise SCR 6870-S ARPR to read: 1) To ensure that only certified markers are used on stainless steel. DNC personnel will use only white certified markers meeting G-29M Process Spec 4.M.1.1 requirements to mark all stainless steel material. 2) The responsible engineering units and warehouse services unit have or will be retrained to G-29 Process Spec 4.M.1.1, QCI 1.06 "Receiving and Storage," and SOP-32 "Administrative Control of Unit 2 Material." 3) Remove and route all markers used by crafts, inspections, warehousemen and engineering on stainless steel material to the warehouse nonconforming storage area.

c. Revise procedure WBN-QCI 1.20 "Site Control of Procurement," attachment A as indicated below:

ITEM	SPECIFICATION	DOCUMENTATION
a. Temporary Marking Material	PF-1053**	Certification

** To also read - procure only white markers which meet the requirement of G-29 Process Specification 4.M.1.1

7.3 Small Code Items, CATD number 40500-WBN-2

NCR 6834 was initiated by the Division of Nuclear Construction to identify the issue regarding the mixing of Quality and non-quality small code fittings with identical heat numbers. Corrective actions include the securing of the steamfitter field storage trailer, and eliminating the practice of field storage and issue for Office of Nuclear Power and Division of Nuclear Construction (DNC). The material that was in the trailer will be evaluated and dispositioned per the February 10, 1987 memorandum, from S. A. White, which is being revised to include construction warehouse activities (attachment C of this report). Division of Nuclear Engineering (DNE) will determine the acceptability of vendors who supplied pressure boundary material on non-QA contracts. DNE will determine the acceptability of material installed in ASME systems which are not certified for ASME applications. Modifications DNC will issue a memorandum to the DNE Project Engineer requesting him to include these items in the disposition of NCR 6834.

7.4 Requisitions, CATD number 40500-WBN-3

TVA memoradum T04860627980 was initiated by the Office of Nuclear Power (ONP) agreeing to the finding, improper changes to requisitions, and cause, uncertainty in the interpretation of procedure AI 5.1, identified in this report. ONP has agreed, per the aforementioned memorandum, to revise AI 5.1 to incorporate definite language which will explicitly require that all changes to procurement documents must have prior concurrence of the procurement document originator or designee. CATD number 40500-WBN-3 was initiated for tracking purposes only.

The Corrective Action Plan (T41-870825808) issued from the Office of Nuclear Power (ONP) as a result of Employee Concerns Task Groups CATD (40500-WBN-3) stated that changing AI 5.1 to explicit language (as agreed upon in ONP's initial response memorandum) requiring the originator or designee to approve any changes would unnecessarily restrict the procurement document flow. If the originator failed to identify a designee and was on a temporary assignment or in leave status, no one would be able to act in his behalf. Present language allows the originator's organization to provide a competent substitute which will provide procurement continuity. Current language is in complete agreement with the NQAM in this regard. No further action will be taken. R3

8.0 ATTACHMENTS

A. Subcategory Summary Table (Computer Print Out) List of Concerns by Concern Number Indicating Safety Relationship and Plant Applicability.

B. List of Concerns by Issue/ELement.

C. TVA Memorandum, R00 870210 910.

ATTACHMENT A
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY
CATEGORY: MC ADEQUACY OF MATERIAL
SUBCATEGORY: 40500 MATERIAL IDENTIFICATION

CONCERN NUMBER	CAT	SUB CAT	SH R D	PLT LOC	GENERIC APPL B F	B L	S Q	W B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION NO. CATEGORY - MC SUBCATEGORY - 40500
BFN-85-008-002	MC	40500	N	BFN	N	N	N	N	REPORT	SS	DURING AN INTERVIEW CONTACT THE CI STATED THAT THERE IS A LOSS OF MATERIAL IDENTIFICATION AFTER RECEIPT INSPECTION, THAT MATERIAL IS ISSUED WITHOUT IDENTIFICATION AND THAT INSTALLED MATERIAL IDENTIFICATION COULD NOT BE CONFIRMED	1.2.13, 2.3.13, 3.1.13 2.8.13 and 4.13
IN-85-443-003 T50034	MC MP	40500 71100	S	WBN	N	N	N	N	SUBCATEGORY 40500 ADDRESSES ONLY THE PORTION OF THE CONCERN THAT IS UNDERLINED REPORT	SR	QA STAINLESS STEEL DOES NOT COME WITH THE HEAT #, ETC., STENCILED/SCRIBED ON BY THE VENDOR, ONLY IDENTIFIED ON THE BUNDLE. OFTEN THE SS QA PIPE LOSES HT # IDENTIFICATION AND MUST BE DISCARDED. THERE IS A HUGE AMOUNT OF WASTE ATTRIBUTED TO THIS FACT. THE HEAT # IS OFTEN NOT TRANSFERRED DURING CUTTING AND ALSO THE REST MUST BE DISCARDED.	1.2.8, 2.3.8, 3.1.8, 3.2.8, and 4.8
IN-85-443-004 T50034	MC	40500	S	WBN	N	N	N	N	REPORT	SR	PRIOR TO 1984 STAINLESS STEEL PIPE (QA) WAS INSTALLED WITH NO HEAT NUMBER STENCILED/SCRIBED ON THE PIPE THE RECEIVING & STORAGE PRACTICES IN EFFECT AT THE TIME DOES NOT PROVIDE CONFIDENCE THAT THE HEAT NUMBER ON THE TAG IS THE HEAT NUMBER AS RECEIVED FORM THE VENDOR.	1.2.8, 2.3.8, 3.1.8, 3.2.8, and 4.8

1132T

LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY
CATEGORY: MC ADEQUACY OF MATERIAL
SUBCATEGORY: 40500 MATERIAL INDENTIFICATION

CONCERN NUMBER	CAT	SUB CAT	SH RD	PLT LOC	GENERIC APPL B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION NO. CATEGORY - MC SUBCATEGORY - 40500
IN-85-454-003 T50030	MC MP	40500 71100	S	WBN	N N N N REPORT	THIS CONCERN WAS ALSO EVALUATED IN SUBCATEGORY 71100 (ADDRESSING WASTE)	NO	BLACK PIPE HAS HEAT NUMBER ON ONE END. IF THIS END IS CUT OFF THE REST OF THE PIPE IS DISCARDED AS HEAT NUMBER IS OFTEN NOT TRANSFERRED	1.2.15, 2.3.15, 3.1.15, 3.2.15, and 4.15
IN-85-460-002 T50035	MC	40500	N	WBN	N N N Y REPORT	I-85-416-WBN	NO	A36 MATERIAL IN THE MA MATERIAL STORAGE AREA (OUTSIDE) WITH NO HEAT NUMBERS. THE AREA IS CALLED "THE RACK" BY EMPLOYEES	1.2.4, 2.3.4, 3.1.4, 3.2.4, and 4.4
IN-85-667-002 T50067	MC	40500	N	WBN	N N N Y REPORT	I-85-416-WBN	SR	REACTOR BLDGS 1 & 2. THERE ARE NUMEROUS HVAC DUCT SUPPORTS WITH NO HEAT NUMBER THROUGHOUT THE BUILDINGS. CI HAS NO ADDITIONAL INFORMATION. CI INDICATED THAT 1 IN 3 OR SO WERE MISSING NUMBERS.	1.2.11, 2.3.11, 3.1.11, 3.2.11, and 4.11
IN-85-911-001 T50093	MC	40500	N	WBN	N N N N REPORT		SR	THE OUTSIDE PIPERUN (BLACKIRON) FOR THE ERCW DOES NOT HAVE ANY HEAT NUMBERS STAMPED ON IT. NO FURTHER DETAILS AVAILABLE. NO FOLLOW UP REQUIRED	1.2.6, 2.3.6, 3.1.6, 3.2.6, and 4.6
IN-86-282-N06	MC	40500	N	WBN	N N N N REPORT		SR	NRC IDENTIFIED THE FOLLOWING CONCERN FROM REVIEW OF QTC FILE. "Q-MATERIAL NOT IDENTIFIED AS "Q" WHILE IN STORAGE POSSIBLE LACK OF TRACEABILITY	1.2.14, 2.3.14, 3.1.14, 3.2.14, and 4.14

ATTACHMENT A
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY.
CATEGORY: MC ADEQUACY OF MATERIAL
SUBCATEGORY: 40500 MATERIAL INDENTIFICATION

CONCERN NUMBER	CAT	SUB CAT	SHR D	PLT LOC	GENERIC APPL B F	B L	S Q	W B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION NO. CATEGORY - MC SUBCATEGORY - 40500
EX-85-002-005 T50096	MC	40500	N	WBN	N	N	N	Y REPORT		SR	TVA WATTS BAR MANAGEMENT (NO NAMES) ALLOWED MARKERS TO BE USED WITHOUT TESTING CHLORIDE OR OTHER CHEMICAL CONTENTS. IT IS PROBABLE THAT MARKS HAVE BEEN MADE AND LEFT ON STAINLESS STEEL PIPING WHICH COULD VIOLATE CLEANLINESS REQUIREMENTS. CI HAD NO FUTHER INFORMATION.	1.2.2, 2.3.2, 2.5.2, 2.6.2, 3.1.2, 3.2.2 4.2, 5.1.2, 6.1, and 7.1
EX-85-181-001 T50225	MC MC MC	 40500 40500	S	WBN	N	Y	Y	Y REPORT	FOR SUBCATEGORY 40500 THIS CONCERN WAS GENERIC TO WBN AND BLN ONLY. SUBCATEGORY 40500 ADDRESSES ONLY THE PORTION OF THE CONCERN THAT IS UNDERLINED.	SR	ON VALVE INSPECTIONS (TEST 70) QC VERIFIES THE PROPER VALVE BY THE MARK NUMBER TAG WHICH IS INSTALLED BY THE WAREHOUSE OR VENDOR AND IS OFTEN JUST A PAPER OR METAL TAG WHICH CAN BE REMOVED OR REPLACED BY ANYONE. IF THE VALVE HAS BEEN SUBSTITUTED FROM WHAT THE DRAWING LISTS, THE BILL OF MATERIALS DOES NOT PROPERLY REFLECT THE CHANGE. NO PAPERWORK PROVIDED TO WATTS BAR ENGINEERING TO DOCUMENT THAT IS AN ACCEPTABLE REPLACEMENT. MANY SUBSTITUTES HAVE COME IN FROM HARTSVILLE, PHIPPS BEND, YELLOW CREEK AND ARE A DIFFERENT TYPE THAN WHAT THE DRAWING CALLS FOR. CHECK UNIT 2, STEAM GENERATOR BLOWDOWN SYSTEM AS AN EXAMPLE. CONSTRUCTION DEPT. CONCERN CI HAS NO ADDITIONAL INFORMATION.	1.2.3, 2.3.3, 3.1.3, 3.2.3, and 4.3

LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY
CATEGORY: MC ADEQUACY OF MATERIAL
MATERIAL SUBCATEGORY: 40500 MATERIAL IDENTIFICATION

CONCERN NUMBER	CAT	SUB CAT	SHR D	PLT LOC	GENERIC APPL B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION NO. CATEGORY - MC SUBCATEGORY - 40500
IN-85-388-003 T50014	MC	40500	N	WBN	N N N Y REPORT	1-85-161-WBN	SR	ASTM 307 BOLTING MATERIALS DO NOT HAVE MANUFACTURERS STAMP, AND RECEIVING DOES NOT ALWAYS KEEP SEPARATED IN BUNDLES. UNIT 1 AND 2.	1.2.1, 2.3.1, 3.1.1, 3.2.1, and 4.1
IN-85-388-004 T50015	MC	40500	N	WBN	N N N Y REPORT	1-85-146-WBN	SR	QA LEVEL 1 & 2 MATERIALS RECEIVED THE SAME TREATMENT UP TO 4-5 YEARS AGO, THEN THE HEAT NUMBER OMITTED FROM LEVEL 2. NO TRACEABILITY WHEN REQUISITIONED OUT. UNIT 1 & 2.	1.2.9, 2.3.9, 3.1.9, 3.2.9, and 4.9
IN-85-441-001 T50040	MC	40500	N	WBN	N N N Y REPORT	1-85-373-WBN	SR	HEAT NUMBER AND OTHER DATA ARE NOT SCRIBED ON TUBE STEEL (HANGERS). THE ATTACHED TAG HAS HEAT NUMBERS ONLY WRITTEN ON IT. UNITS #1 & 2, ALL BLDGS WHERE THERE ARE HANGERS.	1.2.5, 2.3.5, 3.1.5, 3.2.5, and 4.5
WI-85-036-002 T50011	MC MC	40200 40500	S	WBN	N N N N REPORT	SUBCATEGORY 40500 ADDRESSES ONLY THE PORTION OF THE CONCERN THAT IS UNDERLINED.	SR	MATERIAL REQUISITIONS ARE NOT BEING PREPARED AS PER PROCEDURE; THE REQUISITIONS ARE BEING CHANGED OR ALTERED LATER (CI WILL NOT DIVULGE ADDITIONAL INFORMATION	1.2.10, 2.3.10, 3.1.10, 3.2.10, and 4.10 IRI
WI-85-041-014 T501193	MC	40500	N	WBN	N N N N REPORT	1-85-416-WBN	SR	A-36 STRUCTURAL STEEL IS NOT MARKED WITH HEAT/LOT NUMBER AND IS THEREFORE NOT TRACEABLE. CI HAS NO ADDITIONAL INFORMATION. NUC. POWER DEPT. CONCERN.	1.2.4, 2.3.4, 3.1.4, 3.2.4, and 4.4

ATTACHMENT A
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY
CATEGORY: MC ADEQUACY OF MATERIAL
SUBCATEGORY: 40500 MATERIAL IDENTIFICATION

CONCERN NUMBER	CAT	SUB CAT	S/R/D	PLT LOC	GENERIC APPL B F	B L	S Q	W B	QIC/NSRS INVESTIGATION REPORT	PSR	CONCERN DESCRIPTION	REFERENCE SECTION NO. CATEGORY - MC SUBCATEGORY - 40500
WI-85-053-005 T50135	MC	40500	N	WBN	N	N	N	Y REPORT		SR	SMALL CODE ITEMS ARE NOT CONTROLLED IN STORAGE AND ISSUANCE, THEREFORE TRACEABILITY IS INDETERMINATE. CONSTRUCTION DEPT CONCERN. CI HAS NO FURTHER INFORMATION.	1.2.7, 2.3.7,, 2.5.3, 2.6.3, 3.1.7, 3.2.7, 4.7, 5.1.3, 6.3, and 7.3
XX-85-111-001 T501191	MC	40500	N	BLN	N	N	N	Y REPORT	I 85-864-BLN	SR	BELLEFONTE: STRUCTURAL STEEL IS NOT MARKED WITH HEAT/LOT NUMBER AND IS THEREFORE NOT TRACEABLE. CI HAS NO ADDITIONAL INFORMATION. NUC POWER DEPT. CONCERN.	1.2.4, 2.3.4, 3.1.4, 3.2.4, and 4.4
XX-85-120-003 T501191	MC	40500	N	SQN	N	N	N	N REPORT	I 85 865-SQN	SS	SEQUOYAH: HEAT NUMBERS HAVE BEEN PLACED ON APPROX. 5 PLATES ON THE CONTAINMENT VESSEL WHEN IT WAS DISCOVERED THERE WERE NO HEAT NUMBERS ON THESE PLATES. THIS WAS DONE WITHOUT QUALITY'S KNOWLEDGE AND VIOLATED THE QA PROCEDURE. CI HAS NO FURTHER INFORMATION. CONSTRUCTION DEPT. CONCERN.	1.2.12, 2.3.12, 2.5.1, 2.6.1, 3.1.12, 3.2.12, 4.12, 5.1.1, 6.1, and 7.1

18 CONCERNS FOR CATEGORY MC SUBCATEGORY 40500

*PSR Code
SS Nuclear Safety Significant
SR Nuclear Safety Related
NO Nuclear Safety-Related

ATTACHMENT B

BFN-85-008-002	Loss of Material Identification
EX-85-002-005	Austenitic Stainless Steel
EX-85-181-001	Valves (Test 70)
IN-85-388-003	ASTM A-307 Bolts
IN-85-388-004	Level II Material
IN-85-441-001	Tube Steel
IN-85-443-003	Stainless Steel Pipe/Material
IN-85-443-004	Stainless Steel Pipe/Material
IN-85-454-003	Black Pipe
IN-85-460-002	Structural Steel
IN-85-667-002	HVAC Duct Supports
IN-85-911-001	Black Iron Pipe
IN-86-282-N06	Quality Material
WI-85-036-002	Requisitions
WI-85-041-014	Structural Steel
XX-85-111-001	Structural Steel
XX-85-120-003	Containment Vessel Plate Steel
WI-85-053-005	Small Code Items

UNITED STATES GOVERNMENT

R00 870210 910

TENNESSEE VALLEY AUTHORITY

Memorandum

TO : Those listed

FROM : S. A. White, Manager of Nuclear Power, LP 6N 38A-C

DATE : February 10, 1987

SUBJECT: CONTROL OF REPLACEMENT ITEMS

In order to establish stronger controls on the use of commercial grade items without proper dedication documentation and to augment existing material controls on items in safety-related applications, I am requiring the site directors to take the following actions.

- Upon receipt of this memorandum, no safety-related items that have been issued by Power Stores without specific designated application (shop spares) shall be used.

  Return to Power Stores all safety-related shop spares including consumables and bulk items. Each site shall ensure that shop spares for safety-related applications are eliminated. Shop spares for nonsafety-related applications are to be maintained in secured areas and issued in a controlled manner to prevent their use in a safety-related application. Consumables and bulk items shall be procured to the highest quality level, unless specifically approved by appropriate site management on a case-by-case basis. Satellite stores under Power Stores control and procedures may be established to accommodate expeditious issues of satety-related items.

- Each site shall establish a conditional release program for all Quality Assurance (QA) Level II items (commercial grade items used in safety-related application). This conditional release program shall be structured to permit these items to be issued and installed prior to evaluation of the adequacy of the dedication process for that item. All safety-related items must be tracked from Power Stores issuance to their specific application.

- Procurement of QA Level II items shall be permitted only with an acceptable dedication process. The dedication process shall be defined and documented at time of purchase requisition preparation. Any item for which an acceptable dedication process cannot be defined at time of purchase requisition preparation shall be procured as QA Level I (safety-related).

- Each site shall establish an item evaluation group consisting of appropriate personnel from Division of Nuclear Engineering, Environmental Qualification Project, and QA to accomplish the following activities.

(19)

Those listed
February 10, 1987

CONTROL OF REPLACEMENT ITEMS

- Evaluate previously installed QA Level II items. Any item that upon evaluation is found to be lacking sufficient data to permit dedication will be documented on a Condition Adverse to Quality (CAQ) and tracked through closeout. Items with sufficient documentation will be dedicated, and the dedication documents maintained as permanent QA records.

- Evaluate QA Level II items that are conditionally released. Power Stores shall forward all copies of form TVA 575 to the evaluation group. Any item that upon evaluation is found to be lacking sufficient data to permit dedication will be documented on a CAQ and tracked through closeout. Items with sufficient documentation will be dedicated and the dedication document will be maintained as permanent QA records.

- Evaluate existing Power Stores inventory of QA Level II items and returned shop spares. Evaluation of items currently in inventory and shop spares shall be performed to determine if documentation exists that permits dedication to a known specific application. Any item that cannot be dedicated upon evaluation, either due to unknown application or insufficient data, shall be redesignated for use in nonsafety-related applications.

- Define proper QA level of safety-related items prior to procurement.

- Define the dedication process for QA Level II items prior to procurement.

Within ten working days from the date of this memorandum, each site shall present me with a plan for implementation of the aforementioned directives. These plans shall be reviewed and returned to your organization within one week. All programs shall be in place within four weeks from the date of this memorandum.

S. A. White

H. L. Abercrombie, ONP, Sequoyah
J. P. Darling, ONP, Bellefonte
H. P. Pomrehn, Browns Ferry
G. Toto, ONP, Watts Bar

HPP:I'H:JM
cc: RIMS, HR 4N 72A-C
R. W. Cantrell, W12 A12 C-K
S. B. Fisher, LP 5N 38A-C
R. L. Gridley, LP 5N 157B-C
R. C. Parker, LP 4N 45A-C
R. A. Pedde, 11-128 SB-K