

TVA EMPLOYEE CONCERNS  
SPECIAL PROGRAM

REPORT NUMBER: 17100

REPORT TYPE: Subcategory - Construction  
(Final Report)

REVISION NUMBER: 3

TITLE: Mechanical

PAGE 1 OF 137

REASON FOR REVISION:

- Incorporate SRP comments and incorporate Line Management's responses to WBN and NPS CATDs. Revision 1
- Incorporate SRP comments, Line Management's responses to remaining CATDs, and finalize report. Revision 2
- Incorporate SRP comments into the Executive Summary. Revision 3

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

2515T/4524T/2460/5225T

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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 (terms formed from the first letters of a series of words).

Additionally, at the end of each subcategory report the reader will find at least two attachments. The first is a Subcategory Summary Table that includes the following information: the concern number, a brief statement of the concern, and a designation of nuclear safety-related concerns. The second attachment is a listing of the concerns included in each issue evaluated in the subcategory.



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.

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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)



TVA EMPLOYEE CONCERNS  
SPECIAL PROGRAM

REPORT NUMBER: 17100

FRONT MATTER REV: 2

PAGE vi OF viii

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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

TVA EMPLOYEE CONCERNS  
SPECIAL PROGRAM

REPORT NUMBER: 17100

FRONT MATTER REV: 2

PAGE vii OF viii

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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

TVA EMPLOYEE CONCERNS  
SPECIAL PROGRAM

REPORT NUMBER: 17100

FRONT MATTER REV: 2

PAGE viii OF viii

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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
TVILC	Tennessee Valley Trades and Labor Council
UT	Ultrasonic Testing
VT	Visual Testing
WBECS	Watts Bar Employee Concern Special Program
WBN	Watts Bar Nuclear Plant
WR	Work Request or Work Rules
WP	Workplans

OUTLINE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	
1.0 CHARACTERIZATION OF ISSUES	5
1.1 Introduction	
1.2 Description of Elements	
1.2.1 Valves	
1.2.2 HVAC	
1.2.3 Mechanical Equipment	
1.2.4 Insulation	
1.2.5 Pipe/Fittings	
1.2.6 Mixed Structural Connections	
2.0 SUMMARY - This section was deleted	12
3.0 EVALUATION PROCESS	12
3.1 Evaluation Methodology	12
3.1.1 Valves	
3.1.2 HVAC	
3.1.3 Mechanical Equipment	
3.1.4 Insulation	
3.1.5 Pipe/Fittings	
3.1.6 Mixed Structural Connections	
4.0 FINDINGS	28
4.1 Valves Findings	28
4.1.1 Generic	
4.1.2 WBN Specific	
4.1.3 SQN Specific	



---

	<u>Page</u>
4.1.4 BFN Specific	
4.1.5 BLN Specific	
4.2 HVAC Findings	65
4.2.1 Generic	
4.2.2 WBN Specific	
4.3 Mechanical Equipment Findings	66
4.3.1 Generic	
4.3.2 WBN Specific	
4.4 Insulation Findings	71
4.4.1 Generic	
4.4.2 WBN Specific	
4.5 Pipe/Fittings Findings	74
4.5.1 Generic	
4.5.2 WBN Specific	
4.5.3 SQN Specific	
4.5.4 BFN Specific	
4.5.5 BLN Specific	
4.6 Mixed Structural Connections Findings	110
4.6.1 Generic	
4.6.2 Mixed Structural Connections	
5.0 COLLECTIVE SIGNIFICANCE	114
6.0 CAUSES	115
6.1 Causes of Valves Issue Problems	116
6.2 Causes of HVAC Issue Problems	117

	<u>Page</u>
6.3 Causes of Mechanical Equipment Issue Problems	117
6.4 Causes of Insulation Issue Problems	117
6.5 Causes of Pipe/Fittings Issue Problems	117
6.6 Causes of Mixed Structural Connection Issue Problem	118
7.0 CORRECTIVE ACTIONS	119
7.1 Corrective Actions Completed	119
7.1.1 Valves Issues	
7.1.2 HVAC Issues	
7.1.3 Mechanical Equipment Issues	
7.1.4 Insulation Issues	
7.1.5 Pipe/Fittings Issues	
7.2 Corrective Action from CATDs	120
7.2.1 Valves Issues	
7.2.2 HVAC Issues	
7.2.3 Mechanical Equipment Issues	
7.2.4 Insulation Issues	
7.2.5 Pipe/Fittings Issues	
7.2.6 Mixed Structural Connections at WBN Issue	
8.0 ATTACHMENTS	137
8.1 Listing of employee concerns indicating safety relationship and generic applicability.	
8.2 List of evaluators.	
8.3 List of concerns by issue.	

## EXECUTIVE SUMMARY

### MECHANICAL

Report Number: 17100

Revision Number: 3

#### I. SUMMARY OF THE ISSUES

Of the 44 concerns evaluated within the Construction - Mechanical Subcategory, 39 were evaluated at WBN. Four of these concerns were deemed potentially generically applicable to SQN as well as an additional SQN specific concern. Three of those concerns were found potentially generically applicable to and evaluated at both BFN and BLN. Four additional site-specific concerns were raised and evaluated at BLN. Therefore, a total of 54 site concerns were evaluated within this subcategory. Of these, nine site problems (17 percent) were identified that had not been fully addressed.

The 44 concerns received were related to six issues normally considered in the mechanical engineering discipline: valves; heating, ventilating, and air-conditioning systems (HVAC); mechanical equipment; insulation; pipe/fittings; and mixed structural connections.

The five problematic concerns (actually nine site concerns) addressed: (1) a Class B valve in a Class A line; (2) Limitorque valve orientation and maintenance; (3) containment penetration vendor welds not properly hydroed; (4) the perception that the ERCW system was designed as stainless steel but not constructed as such; (5) cosmetically rusted valves.

#### II. MAJOR FINDINGS

One of the concern identified problems, Class B valve in Class A line at WBN, had already been addressed under an NSRS evaluation. Corrective action had been identified and completed at the time of this evaluation.

Three of the problematic site concerns were actually one Limitorque valve orientation/maintenance concern raised at BLN and evaluated at each site. It was found to be a problem issue at three of the four sites: WBN, BFN, and BLN. This issue was being partially addressed at those sites by the Environmental Qualification programs (EQ Binders/QMDS).

One other WBN issue (containment penetration vendor welds not properly hydroed) was factual and a problem at WBN and also was potentially generic to all sites. Proper documentation (NCRs) of this condition had been issued and the CAQ made generic to all sites before the concern was raised through QTC. This evaluation found that neither SQN nor BFN had addressed this potential CAQ at their sites.

The concern citing that the ERCW system was designed as stainless steel but not constructed as such was found partially factual and a problem at SQN. SQN had implemented an ECN to change portions of the ERCW system piping inside the plant from carbon to stainless steel because of corrosion problems. The change-out was performed on a piece-meal basis as outages and manpower permitted. The complete status of the pipe change-out was not adequately known; therefore, DNE and SQN Modifications were in the process of evaluating the as-built piping.

The last site concern related problem (the ninth) was identified by a BLN specific concern. It cited that some valves in the plant were, "rusty on the outside but okay on the inside". The concern itself was found to not constitute a problem; however, in the process of evaluation, it was determined that DNC employees did not have a vehicle comparable to the ONP Maintenance Request for initiating and tracking corrective maintenance of plant equipment. The current vehicle at their disposal was the employee concern program, which this evaluation concluded, was a very inefficient means of identifying and correcting minor maintenance items.

The remainder of the 54 site concerns (83 percent) were found to be either not factual or factual but not a problem.

### III. COLLECTIVE SIGNIFICANCE

All of the issues evaluated were each represented by one concern with three exceptions: (1) the two concerns addressed under Procedure Violation (containment penetration vendor welds not hydroed), (2) two concerns (raised by the same individual) citing that the ERCW line at WBN was originally designed as stainless steel but that stainless steel was not installed, (3) five concerns were raised citing that mixed schedules and grades of pipe were welded together at WBN within the same systems. No collective significance could be assigned to issues (1) and (2) and no overall patterns or trends were identified when all issues were coalesced. However, the five factual but not a problem concerns, issue (3), did imply a problem. Why did the five concerned individuals think that a problem existed? It was the evaluator's opinion that the problem perception was due to ignorance of pipe classification criteria and the fact that system design change points could be appropriately designated where the criteria changed. Based on the concerned individuals ignorance of these basic facts, the effectiveness of management in answering basic questions such as these either through training, employment involvement meetings, or a simple question and answer must be questioned.

### IV. CAUSES OF THE MAJOR FINDINGS

The inadequacies and incongruencies found in the WEN, BFN, and BLN Limatorque preventative maintenance programs were due in part to the fact that numerous persons/organizations were assigned the responsibilities of defining these activities for their respective organizations. The problematic findings were also attributed to



inadequate programs and controls established to ensure that all applicable vendor, EQ, and other TVA specified PM activities and storage requirements were defined and updated as necessary, scheduled, and then performed at the required intervals and on the required equipment.

Designer error was the root cause, as specified on the applicable NCR, for a 2-inch Class B check valve having been installed in a Class A line at WBN. The valve tags not being in place was attributed to normal wear and tear.

The causes for corrective action not being taken on cosmetically rusted valves at BLN could be attributed to two factors: (1) DNC employees had no efficient vehicle, such as the ONP MR program, for initiating and tracking corrective maintenance or plant equipment short of the employee concerns program, and (2) the responsibilities of ONP employees for initiating an MR when the need for corrective maintenance was identified was not delineated in the appropriate plant procedures.

Within the HVAC, mechanical equipment, mixed structural connections, and insulation issues; no problems were identified.

The concerns evaluated at each site under "Procedure Violation" cited that neither the vendor nor TVA had hydro tested a circumferential vendor weld in the process pipe portion of containment penetrations at WBN. The cause of this problem at WBN, as cited on the previously generated NCR's documenting this CAQ, was that the DNE Contract Engineering Unit failed to ensure that code requirements had been met on the DNE-procured penetrations in question. The evaluation of this issue for generic applicability to SQN had been initiated in response to the WBN NCR but had not been completed at the time of this investigation. BFN had not yet begun their evaluation at the time of this investigation. The cause for evaluation delay of this potentially generic CAQ to BFN was the BFN Design Project not performing the evaluation according to procedure, but attempting to transfer the responsibility for the evaluation of this potential CAQ to the ONP Site Director's Organization. The BFN Site Director was also at fault for neither accepting nor rejecting this transfer of responsibility. The cause for BLN not revising their applicable QCPs requiring their inspectors to specifically examine the welds in question during hydrostatic testing, as stated in their response to the Potential Generic Condition Evaluation memorandum, was attributed to a miscommunication between the cognizant DNE and DNC engineers.

The second problem identified within the pipe/fittings issue was at SQN and was related to a WBN concern which cited that the ERCW piping was required to be stainless steel. At SQN, portions of the ERCW piping system within the plant were changed from the original design of carbon steel to stainless steel under an ECN. Some of the piping was changed-out; however, the as-constructed status of the system was not adequately known. The DNE Mechanical Pipe Unit was in the process of evaluating the as-built piping. The cause for the portion of the SQN ERCW piping, required to be stainless steel under the applicable ECNs, not being changed from carbon steel was that the design change had been

initiated after the plant had gone into operation with the originally designed carbon steel piping; thus restricting the ability to get the changes made in a timely manner.

#### V. CORRECTIVE ACTION ON MAJOR FINDINGS

BLN had taken action to address the incongruencies in their DNC and ONP PM programs by assigning the equipment Preventive Maintenance assessment responsibilities to the appropriate ONP System Engineer. Although this was a step in the right direction, it had not been brought to fruition at the time of this evaluation as documented by the deficiencies identified in this report.

An SCR had documented the issue of a Class B valve in a Class A line at WBN. The valve was upgraded under an ECN by Kerotest, the vendor. The Class 1 ASME tag was placed on the valve. The SCR was closed.

An NCR had been issued to document and resolve the issue of containment penetrations not properly hydroed by either the vendor or TVA. This NCR had been closed on a use-as-is basis. An additional NCR had been issued to further document the cited problem at WBN (both NCR's had been generated before the employee concern). At the time of evaluation, the second NCR was still open pending hydrostatic testing and arbitration between TVA and NRC relative to the acceptability of the first NCRs use-as-is disposition. SQN, BFN, and BLN had been notified of this potential CAQ; however, only BLN had responded to the Potential Generic Condition Evaluation memorandums at the time of this evaluation.

Relative to the SQN ERCW system piping change-out, three ECNs had already been issued to document that part of the ERCW system was left as carbon steel instead of replaced by stainless. The DNE Mechanical Pipe Unit was in the process of evaluating the as-built piping present status.

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-719-001 During the 1979 hydrostatic test of a thirty-six inch main steam line, the valve which isolated the turbine leaked. This valve was located in the south valve room.	X		This concern issue was factual in that an MSIV seat leakage problem was encountered during the 1979 unit 1 main steam hydrostatic test. However, applicable portions of G-29 allowed for seat leakage during hydrostatic test conduct; therefore, this was not considered a deficient condition. The leakage problem was attributed to the operation of the valves under abnormal conditions (hydrostatic vs dynamic steam) rather than seat failure. No valve seat performance problems had been identified nor repairs made since installation of these valves.	None	None	NOTE: The following summary of collective significance was applicable to all issues evaluated within this subcategory.  All of the issues evaluated were each represented by one concern with three exceptions: (1) the two concerns addressed under Procedure Violation (containment penetration vendor welds not hydroed), (2) two concerns (raised by the same individual) citing that the ERCW line at WBN was originally designed as stainless steel but that stainless steel was not installed, and (3) five concerns were raised citing that mixed schedules and grades of pipe were welded together at WBN within the same systems. No collective significance could be assigned to issues (1) and (2) and no overall patterns or trends were identified when all issues were coalesced. However, the five factual but not a problem concerns, issue (3), did imply a problem. Why did the five concerned individuals think that a problem existed? It was the evaluator's opinion that the problem perception was due to ignorance of pipe classification criteria and the fact that system design change points could be
IN-86-284-002 Valves V329 and V330 in the in-core instrument building were pressure-tested by air in 1980, but these valves should have been hydro-tested. CI stated that the valves were replaced (possibly	X		This concern issue could not be verified as factual since both pneumatic and hydrostatic tests were required and performed on these valves. The valves in question were replaced in late 1983 after they failed and could not be modified to pass a pneumatic containment isolation valve leak rate test which	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-284-002 (continued) after testing). CI has no further information. Construction Dept. concern.			was required by Appendix J to 10 CFR 50. The replace- ment valves were success- fully retested (pneumatic) in early 1984. Both the original valves and the replacement valves were hydrostatically tested before conduct of the pneu- matic test (late 1982 and late 1983). Contrary to the statement of the con- cern, no pressure tests were conducted on these valves in 1980.			appropriately designated where the criteria changed. Based on the concerned individuals ignorance of these basic facts, the effective- ness of management in answering basic questions such as these either through training, employ- ment involvement meetings, or a simple question and answer must be questioned.  Of the 54 site concerns, 83 per- cent were found either not factual or factual but not a problem. Why did 34 persons (85 percent of the concerned individuals) perceive problems when problems did not exist? It was the evaluator's assumption that this collectively significant question would be addressed on the Category or ECTG Final Report levels. Neverthe- less, this question was evident upon reflection on the evaluation findings.
XX-85-094-007 Limitorque valves at BLN were not stored or installed in the correct attitude, nor were they main- tained properly.	X		WBN DNCs Preventive Mainte- nance Program Limitorque valve operators adequately addressed the applicable PM and storage requirements with the following excep- tion: storage level "C" specified no humidity or temperature control, no	Numerous persons/ organiza- tions were responsi- ble for de- fining Lim- itorque maintenance	The corrective action of NCR 7199 RO is the corrective action plan to close this CATD.	



ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			<p>preferred operator orientation specified, no inspection of motor leads for oil/grease damage during PM, and no verification of limit switch assembly screw length and lock washer installation. (CATD 17101-WBN-01)</p>	<p>activities for their respective organizations. Also, inadequate programs and controls established to ensure all applicable vendor, EQ, and other TVA specified PM activities and storage requirements were defined and updated as necessary, scheduled and performed.</p>	<p>Limitorque PM instructions will be revised to include meggering of CSSC operator motors and exercising on non-CSSC operators where and when practical. A</p>	
			<p>The WBN ONP Limitorque PM Program was found deficient in areas of complying with vendor recommendations and testing operator motors. (CATD 17101-WBN-02)</p>	<p>See above</p>		

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			Based on the deficiencies found in the PM program for Limitorque valve operators, ONPs programs/controls were inadequate. (CATD 17101-WBN-03)	See above	review will be performed to assure all applicable vendor, QMDS, and other TVA requirements are being met. Review and documentation of deficiencies will be done according to AI-9.2. All 1E harsh environment Limitorque motors will be tested as the PM schedule dictates. DNC plans to take responsibility for developing their own PM program.  Proposed corrective action is to revise AI-9.2 attachment 11, MSL 2.2, and ESL 4.5 to include evaluation of other TVA specified requirements for PM activities and evaluation of any available documented operating experience. A program is now underway to evaluate, review, and revise the MMS and EMS PM program. As a minimum, this program	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			TS 01.00.15.14.03 (DPM N82 A17), RO, paragraph 7.26 relative to the minimum storage requirements for the Limitorque valve operators was inadequate. (CATD 17101-NPS-01)	See above	will evaluate all CSSC PMs before unit 1 fuel load. The Site Director/ Project Manager will review the WBN PM program to determine if changes similar to the BNP PM program would be cost effective.	
			BLN should establish adequate programs/controls to ensure that all applicable vendor, EQ, and other TVA specified PM activities and storage requirements (such as DPM N82M3) are identified, updated as necessary, scheduled, and then performed at the	See Above	DPM N82A17 will be modified to include Limitorque Corporation recommended long-term storage requirements. These are consistent with EQ requirements. The applicable portions of N82M3 dealing with storage of Limitorque operators will be reviewed for incorporation into DPM N82A17.	
					Our review of this problem revealed one item related to limitorque preventive maintenance for which corrective action is required. This item is related to the implementation of DPM N82M3 by section	

## Executive Summary Table #1

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			required intervals and on the required equipment. (CATD 17101-BLN-01)		instruction letter EMSIL-14.3.1. The limitorque maintenance requirements contained in EMSIL-14.3.1 will be placed in a plant procedure which requires PORC review. This action will be completed by 09/01/87. No other program deficiencies related to limitorque preventive maintenance has been identified. Concerns related to the application of vendor requirements and environmental qualification requirements in the BLNP preventive maintenance program are addressed in our responses to CATD Numbers 17101-BLN-03 and 17101-BLN-05.	
			BLN DNCs storage procedure, QCP-1.2, should be revised specifying proper Limitorque operator storage level and orientation requirements. (CATD 17101-BLN-02)	See Above	BNP-QCP-1.1 (Receiving Inspection) requires the N-5 Receiving Inspector to forward a copy of BNP-QCP-1.1 Attachment C to the Plant Superintendent of	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			BLN ONP Standard Practice BLM-3.1 should outline guidelines to be used by System Engineers in assessment of equipment PM/Storage requirement. These ONP PM/Storage assessment guidelines were currently specified in Construction Procedure QCP-1.3. (CATD 17101-BLN-03)	See Above	Maintenance PS(M) to specify any special storage/maintenance requirements of permanent material/equipment received at the warehouse. BNP-QCP-1.2 requires the PS(M) to perform a review of vendor literature to determine special requirements for storage of materials or equipment covered by vendor manuals. The storage levels and orientation of limitorque operators while in storage would be specified by the PS(M) on the Attachment C of BNP-QCP-1.1.  The guidelines for ONP system engineers to use in the assessment of equipment PM/storage requirements is given in Standard Practice BLA7.8, Section 5.0 Preventive Maintenance. This procedure will be revised by May 1, 1987 to state	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			<p data-bbox="474 1136 926 1355">The maintenance activities specified in Section 5.0 of Standard Practice BLA-7.8 R6 should be specified within the PM Data Base. Also, the PM activities specified in EMSIL-14.3.1</p>	<p data-bbox="926 1136 1115 1167">See Above</p>	<p data-bbox="1115 201 1472 1105">"In assessing the need for periodic maintenance, the (maintenance) sections shall consider vendor recommendations, other TVA special PM requirements, the probable status (e.g. dry lay-up, wet, deenergized, etc.) of the equipment from time of tentative transfer to plant operations and shall review DNC preventive maintenance methods to determine if they should be continued after transfer." BLE 10 "Long-Term Preservation and Maintenance of Plant Equipment" is the upper tier document for implementation of BNP-QCP-1.3 and BLM 3.1.</p> <p data-bbox="1115 1136 1472 1355">BLA7.8 Section 5.0 requires the system engineer to have the grease in Limitorque operators replaced if the grease in the limitorque operator</p>	



ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			(reference DPM-N82M3) should be specified within the PM program. (CATD 17101-BLN-04)		is not Nebula EP-1. This is presently being accomplished via MR. No correc- tive action is required in this area. The grease in the limit switch gears of all Class 1E operators located in harsh environments will be changed to Mobilgrease 28 by DNC prior to system/ component transfer to plant operations. A limit switch grease inspection program will be initiated just prior to fuel loading. EMSIL-14.3.1 will be put in an Electrical Mainte- nance Guidelines (EMG) and implemented through the PM data base by 9/1/87. Reference CATD 30801- BLN-01, ECSP Report is 308.01-BLN for inclusion of inspec- tion program into the BLN PM program.	

## Executive Summary Table #1

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)			BLN had no QMDS implemen- tation program or any recognition of environ- mental qualification main- tenance requirements within their maintenance programs. BLN should be implementing QMDS PM requirements. (CATD 17101-BLN-05)	See Above	NOTE: The following was the CAP for CATD 30801-BLN- 01:  The BLN (DNC and ONP) PM program data base will be revised to include requirements for lubricant inspec- tion in the Limitor- que limit switchgears of the operators. This action will be completed by July 1, 1987.  (1) DNE complete the development of an EQ program for BLN which complies with the requirements of 10 CFR 50.49 and Regulatory Guide 1.89.  (2) ONP implement the requirements of EQ maintenance in plant procedures.  <u>Background</u> BLN's current program for maintenance of environmentally qualified (EQ) equip- ment is described in	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
XX-85-094-007 (Continued)					BLM1, Section 1.10 on Maintenance of Class 1E equipment, and also in BLM10.1, Section 2.2.2 and 3.0, Preparation of MRs. Purchase of spare/replacement parts of Class 1E equipment is described in BLA9.1 and BLA9.8. DNE started development of an EQ program to comply with the requirements of 10 CFR 50.49 and preparation of an EQ manual to classify parts work was stopped on the program for BLN. This work activity is being tracked on TROI (SCR BLN-EES-8543).	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-055-N04 The NRC identified the following concern from review of QTC file. "Emergency hand valve incorrectly installed at SQN."	X		Based on a review of expurgated file IN-85-055, conversations with both the SQN Compliance Licensing Supervisor and two SQN Reactor Operators, and interviews with both the WBN Assistant Operations Supervisor and a WBN Reactor Operator; the concern citing "Emergency hand valve incorrectly installed" could not be verified as factual. Contrary to a relevant statement the CI made during his interview with QTC, (documented in the expurgated concern file) no fine was ever levied against SQN for the cited reason or anything similar. The cognizant personnel interviewed at both SQN and WBN stated that no valve installation as described existed at those sites.	NA	NA	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
BNP-QCP-10.35-8-17 Some valves in the plant (BLN) were rusted. He said they were probably OK but just looked bad.	X		No functional problem existed in accordance with the statement of the concern, only a cosmetic one. A problem was in evidence in that the employees concern about a routine plant maintenance issue was raised through QCP-10.35 which was an employee concerns program. It was found that DNC employees did not have a vehicle comparable to the ONP MR for initiating and tracking corrective maintenance of plant equipment. It was also found that the responsibilities of ONP employees for initiating corrective action (an MR) when the need for corrective maintenance was identified was not delineated in the appropriate plant procedures. (CATDs 17101-BLN-06 and 07)	The causes for corrective action not being taken on cosmetically rusted valves at BLN could be attributed to two factors: (1) DNC employees had no efficient vehicle, such as the ONP MR program, for initiating and tracking corrective maintenance on plant equipment short of the Employee Concerns Program, and (2)	General Employee Training course GET 4 identifies that all employees have the responsibility for initiating a maintenance request when the need for corrective maintenance has been identified. All plant personnel are required to attend GET 4 training.  DNC will initiate a program that provides a DNC employee's a vehicle to initiate and track corrective maintenance on permanent plant equipment. This program will be in the form of a new BNP procedure or revision to an existing BNP procedure. The new procedure will be incorporated into the existing DNC program by December 15, 1987.	



ISSUES	SR	MS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
QCP-10.35-8-17 (Continued)				the respon- sibilities of ONP employees for initi- ating an MR, when the need for correc- tive main- tenance was identified, was not delineated in the appropriate plant procedures.		
IN-85-463-003 Sheet metal cover box could not be installed over an electrical penetra- tion in the unit 2 In-core Instrument Room because of interference with either Flow Control Valve (FCV)-30-20 or FCV-30-58.	X		This concern was factual in that a potential interfer- ence existed between valve 2-FCV-30-58 and the sheet metal cover for an adjacent electrical penetration. No personnel electrical hazard existed from the exposed electrical penetration con- ductors since no cables had been terminated at the penetration (the installa- tion of the cover was a prerequisite to cable termination).	None	None	



ISSUES	SP	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
EX-85-034-001 Mechanical discrepancies existed on motor operated valves.	X		This concern was factual in that a "mechanical discrepancy" did exist on both 2-FCV-62-90 and 133 at the time the concern was expressed (September 1985). QTC for confidentiality reasons, would not provide information descriptive of the mechanical discrepancies. For organizational reasons, they were assumed to be clearance related; however, this evaluation did not support that assumption. At the time, 10 CFR 50.55e deficiency reports had been issued against these valves because of an NCR documenting three compensator housing failures in 1983. These failures were on valve operators of the same model number and casting material (grey iron). As corrective action, all gray iron compensator housings on this model valve, including the valves in question, were replaced with ductile iron housings. The new housings were on material restraint for a long duration; how-	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
EX-85-034-001 (Continued)			valves in question, were replaced with ductile iron housings. The new housings were on material restraint for a long duration; however, they were received and installed under a work release in early 1986. The proper operation of the valves after compensator housing replacement was documented under the work releases by test 70 to QCP-4.10.9. Because of limited concern information and since no deficient conditions were noted for these valves under test 70 of QCP-4.10.9, the "mechanical discrepancy" was assumed to be corrected by the compensator housing replacement.			
IN-85-169-001 A two-inch Class B valve was installed in a unit one Class A system	X		This concern, Class B valve in a Class A line, was factual. The concern was addressed by NSRS Report I-85-169-001 and in response, an SCR was generated to document the condition adverse to quality. An ECN was written to cor-	Designer error and normal wear and tear.	MR A496490 was initiated to fabricate, install, and document the installation of the TVA ID tag. As far as TVA class and drawing tag, the upgraded ASME tag installed by WP E5841-1	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-169-001 (Continued)			<p>rect the discrepant drawing and have the check valve either upgraded or replaced. The vendor upgraded the valve and a workplan installed the upgraded ASME tag; however, no vehicle was generated to replace the missing system ID and TVA Class and drawing tags as identified in the NSRS report. The concern was closed with this deficient condition not addressed. (CATD 17101-WBN-04)</p>		<p>has the required ASME class 1 identification and also has the figure number which is also the vendor dwg. for the valve. There is no other requirement. One problem was identified with a TVA dwg. which still shows the old valve dwg. FCR-87-58 has been initiated.</p>	
EX-85-046-001 The fire dampers in Diesel Generator Buildings 1 and 5 had never been observed to operate properly.	X		<p>NSRS investigation report I-85-757-WBN adequately addressed the DGB fire damper issue. According to this report and the responsible test personnel, the fire dampers in Diesel Generator Buildings 1 and 5 were tested in Preop Tests TVA-24 and TVA-74F, respectively. All dampers passed the tests required by the test documents.</p>	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-879-001 The inspections done in 1981 on the air supply and return wall ducts for the unit one Ice Condenser System revealed that a number of the ducts were blocked, restricting the air flow through the ducts.	X		The concern related to the unit 1 Ice Condenser System was factual; however, not considered a problem. That concern cited that the associated ducts were "blocked/restricted varying from 30 percent to 100 percent." The cited blockages had been previously identified in the related Preop Test. A test deficiency had been generated, corrective measures taken, and the affected test section successfully retested to clear the deficiency. Some duct blockage was considered acceptable since the required average air flow rate was exceeded in the retesting and no significant ice condenser temperature increases were recorded.	None	None	
PH-85-035-004 A tank in the Auxiliary Building, elevation 713, unit one, was over pressurized by approximately 200 psi.	X		From discussions with cognizant personnel and review of construction NCRs 3877, Revision 1 and 6379, it was determined that the facts were that the unit 1 and 2	None	None	



ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
PH-85-035-004 (Continued) This caused a bulge in the tank at an angle iron band. The tank was bought-off by Engineering because it could not be removed for repair.			Volume Control Tanks had been or could have been overpressurized. However, the statement that the tank was "bought off" was found not justifiable. Nonconformance reports identified each case of possible overpressurization and for each NCR a comprehensive evaluation of the tank was dictated as the corrective action. These dispositions were based on significant Westinghouse input and approval and field inspection, measurements, and tests. The tanks were found acceptable-as-is.			
IN-85-559-001 Neutron detector boxes, in-core reactor two, elevation 713 or a little above. The 40-inch by 30-inch boxes were shown on the Westinghouse drawing but were fabricated and installed onsite (1974/1975).		X	A WBN-PMO response stated that fabrication by TVA craft personnel of items on Westinghouse drawings was an approved practice via numerous methods. Discussions with cognizant personnel confirmed that this was an accurate statement. These items were <u>intended</u> to be fabricated and installed by TVA. Therefore,	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-559-001 (Continued)			this does not represent a condition adverse to quality.			
IN-85-070-001 There was a possible cracked sleeve through the crane wall around the reactor coolant system piping in unit one. The concerned individual (CI) did not know which loop or whether it was around the hot leg or cold leg piping.	X		<p>A review of the response from QTC/ERT revealed the following:</p> <ol style="list-style-type: none"> <li>1. Concern as stated cannot be factual since neither hot or cold leg passes through crane wall.</li> <li>2. Concern as expressed secondhand and was overheard nearly three years ago.</li> <li>3. A sleeve generally serves as a form for concrete placement to keep concrete off the pipe going through the hole. Cracks in concrete in the biological shield wall have been evaluated by the subcategory "Concrete." Cracks were determined to be shrinkage cracks and either within the limits of G-2 or evaluated by DNE.</li> <li>4. Even if a crack existed it would not affect piping since the only possible loading on the sleeve is compressive.</li> </ol>	None	None	



ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-311-001 Bellows were installed without proper paperwork in the annulus area behind the north fire room in the summer of 1985.	X		<p data-bbox="464 198 913 412">Discussions with cognizant construction personnel could not identify a fire room. However, bellows installation in the summer of 1985 did occur in north valve room.</p> <p data-bbox="464 450 913 632">Numerous problems were encountered with fit up, alignment, and damage of the bellows. These problems were all documented via a number of NCRs.</p> <p data-bbox="464 669 913 1100">For the problem of damaged bellows, no acceptance criteria existed. However, a consultant recently examined the bellows and recommended a "use-as-is" disposition. Therefore, the bellows are acceptable as is. There is not a problem of improper paperwork. The CI may not have been aware of the NCRs that were filed or the consultant's study of the bellows.</p>	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-205-002 Engineering personnel were allowed to give bad technical direction to the craft on unit two Feedwater Heaters (numbers 1 and 2, on elevation 692). Both work and final hardware adequacy were affected by technical misdirection, including inaccurate "shooting-in" of heater centerlines by engineers.	X		According to the "Responsibility Descriptions" for WBN, the assigned System Engineer's responsibilities were: "Provide engineering support and interpretation to crafts. Ensure installation is in accordance with design, vendor, and QC requirements. Perform non-QA inspections." Met with the DNC Mechanical Engineering Unit Engineer responsible for/cognizant of the unit 2 feedwater heater change-out. The cognizant System Engineer provided the following information: <ul style="list-style-type: none"> <li>• The number 1 and number 2 feedwater (FW) heaters were not located on elevation 692 but on Turbine Building floor elevation 708.</li> <li>• These vessels were non-safety-related and were outside the scope of the WBN QA program; therefore, site QA procedures for equipment setting did not apply.</li> </ul>	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-205-002 (Continued)			<ul style="list-style-type: none"> <li>• No specific equipment setting tolerances were given on DNE or vendor drawings/instructions.</li> <li>• Nominal center line elevations were given on TVA piping drawings and on TVA revisions to the vendor drawings.</li> <li>• The WBN heater bases modified by TVA to adapt the Yellow Creek Nuclear Plant heaters to the WBN system piping and embedded rails. The finished installation was comprised of field shortened pedestals on YCN heaters bolted to salvaged wheel assemblies cut from the pedestals of the scrapped WBN heaters. This was accomplished by means of two welded base plates.</li> <li>• Provision was made for shims to adjust heater center line elevation.</li> <li>• The heaters were set using an optical level to locate the shell-end center line (as marked by the vendor). Civil QC control points were used as elevation references for the optical level. The shell center line was transferred to the heater</li> </ul>			

## Executive Summary Table #1

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-205-002 (Continued)			<p data-bbox="514 215 934 423">opposite end using a water level. Measurements were taken to the closest 1/16-inch. Shims were installed as required in 1/8-inch increments.</p> <ul data-bbox="514 431 934 808" style="list-style-type: none"> <li>• The finished installation met all design requirements and was accomplished with good engineering practice.</li> <li>• The heater center lines were located as close as practically possible and were determined to be acceptable by the DNC Mechanical Engineering Unit.</li> </ul> <p data-bbox="514 839 934 1309">The Feedwater Heater Instruction Manual for the number 1 and number 2 heaters transferred to WBN from YCN was reviewed for relevant information. Under "Setting Heaters," it gave no tolerance instruction/criteria for heater center line elevation. It did state, "The fixed supports have been designed so that shims have to be used to obtain the proper elevation and orientation."</p>			

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-205-002 (Continued)			QAPP 10 revision 3, "Quality Assurance Program Policy - Inspection," paragraph 2, "Scope," stated in part, "This program is applicable to all safety-related items (contained in the Q-List, when it is issued) . . ." The Q-List was reviewed for documentation of the statement that the number 1 and number 2 heaters were non-QA and; therefore, did not require QA inspection. It listed "all valves, instruments, equipment, and piping: for systems 2, 5, and 6 as non-QA. Relative to system 3 it listed "heater A1, B1, and C1" as non-QA.			
IN-85-186-001 The high pressure 24-inch and 48-inch steam lines for both units were insulated incorrectly by North Brothers Contractors. The metal insulation covering overlaps one-inch which did not comply with the specification that the metal edges touch without overlap.		X	A review of the PMO response to this concern revealed that the subject insulation was installed under two contracts (71C62-54462 and 76K72-820594). Investigations by PMO, revealed that both of the above contracts specify a two-inch lap of the metal insulation cover and that the insulation and its metal cover were installed in full compliance to the contract specifications. Upon interviewing the individual responsible	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-186-001 (Continued)			<p data-bbox="491 206 942 360">for the PMO response, it was determined that TVA Contract Specification 2967 governed the installation of insulation at WBN.</p> <p data-bbox="491 391 942 699">Review of TVA Contract Specification 2967 verified the fact that a two-inch overlap in the metal insulation cover was required. This specification did not require the covers to touch without overlap, as described in the concern.</p> <p data-bbox="491 729 942 976">Based on the acceptable response by the PMO and a review of the requirements for installing metal insulation covers, there was no problem with the pipe insulation installation.</p>			
IN-85-008-002 Some insulation over ceiling plates and cable tray supports in the Auxiliary Building, elevation 737, was installed contrary to procedure in the fall of 1984. The slits in the material were directly	X		The NSRS investigation determined that at least one application of the fire barrier material was contrary to procedure (e. g., the slits in the material were directly over one another instead of 180° apart). Based on this, the NSRS recommended that an engineering evaluation be	None	None	



ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-008-002 (Continued) over one another instead of at least 90-degrees apart.			performed to determine if the installed configuration was acceptable. The Mechan- ical Engineering Branch (MEB) responded to this recommendation by emphasi- zing the fact that TVA had committed to the NRC to in- stall this material in accordance with "3M-sup- plied documentation." This documentation was based on barrier configurations that had been satisfactorily tested. A problem identi- fication Report (PIR) was issued to address and track this item. According to the PIR, the vendor performed a test to determine the acceptability of the in- stalled configuration. The responsible 3M Corporation individual stated that the subject test was performed and was successful in qual- ifying the as-installed fire barrier configuration.			
PH-85-003-004 There was no insulation between pumps on elevation 692.	X		Interviews with various re- sponsible personnel failed to reveal any problems or requirements with regard to the insulation of pumps.	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
PH-85-003-004 (Continued)			<p>The Design Standard Specifications covering the various pumps at WBN required that all contractors supply equipment that was in full compliance with all Occupational Safety and Health Act (OSHA) Standards.</p> <p>Interviews with both the Construction and Operation Safety Engineers did not identify any pumps that were in violation of safety standards.</p> <p>A walkdown of all pumps on elevation 692 did not reveal any conditions that conflicted with the specifications. Some of the pumps in unit 2 were not insulated. However, this was because of the ongoing construction work and will be corrected as construction progresses.</p> <p>Based on the above findings, there was no problem with insulation between pumps.</p>			
IN-86-200-004 The CI observed a foot to 150-foot run of 30-inch		X	The concern was not factual since no pipes of the specified diameter (30-inch)	None	None	

ISSUES	SR	NS	FINDINGS.	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-86-200-004 (Continued) od pipe drop in the Turbine Build- ing 3 to 4 inches when a hanger was removed under a work package.			were located in the  described area. A 24-inch  pipe in the described area  had undergone hanger re-  work; however, the cogni-  zant engineer was not aware  of the pipe moving the  cited 3 to 4 inches. The  hangers for this section of  pipeline in the Turbine  Building were temporarily  pinned (pending filling of  the line). According to  G-43, they will be perman-  ently set at time of hydro-  static testing and any  hanger discrepancies will  be identified and corrected  at that time.			
IN-85-211-001 and IN-85-211-002 The Essential Raw Cooling Water System (ERCW) was designed to be stainless; however, it was not con- structed of stain- less.	X		The concerns related to  discrepancies in the ERCW  pipeline between the pump-  ing station and the plant  (WBN) were not factual.  The NSRS evaluation found  no evidence or documenta-  tion of leaks, or pump dam-  age because of water star-  vation. They also deter-  mined that the section of  pipe in question had always  been specified as carbon  steel and not stainless.  This report concurred with  those conclusions.	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-211-002 (Continued)			The SQM evaluation included the ERCW system inside the plant buildings as an additional scope to the concern. Portions of the ERCW system within the plant buildings were changed from the original carbon steel to stainless steel under an ECN in February of 1981. Some of the piping was changed-out as plant operations permitted; however, the as-constructed status was not adequately known.	The design change had been initiated after the plant had gone into operation with the originally designed carbon steel piping. The plant operations restricted the ability to get all the changes made.	Corrective action was two part: 1. The seismic analysis will be revised to incorporate the carbon to stainless steel piping changes. 2. Another ECN will be written to back out portions of the original ECN utilizing ONP as-constructed information.	
IN-85-964-002 and PH-85-035-001 Temporary materials/lines were put into permanent service without proper documentation.	X		The following findings relate to concern IN-85-964-002, citing that a superintendent had temporary materials put into permanent service in the intake pumping structure.  According to interviews with the named WBN Craft Superintendent, an additional WBN Craft Superintendent and other know-	None	None	

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-964-002 and PH-85-035-001 (Continued)			<p>ledgeable individuals, the implicated craft superintendent was not involved in any work at the Intake Pumping Station (IPS) during the specified timeframe (late 1984, early 1985). Interviews with the cognizant system engineers supported that fact. (System 67, Essential Raw Cooling Water (ERCW) and system 26, High Pressure Fire Protection (HPFP) were the 'Q' systems located in the IPS and were already transferred at that time. A review of applicable ONP transfer documentation supported this. The cognizant engineers were not aware of any work performed that fit the concern description. They also stated that the fittings could only be 2-1/2-inches or 3-inches since fittings smaller than 2-1/2-inches are socket welded, not butt welded. A review of workplans performed during the specified timeframe on the referenced systems revealed that no work of the nature described had been performed during the timeframe specified by the CI.</p>			

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-964-002 and PH-85-035-001 (Continued)			<p>The following findings relate to concern PH-85-035-001 citing that a 4-inch SS drain line running from elevation 676 to 713 from the collector tank in unit 1, system 77 or 26 was installed as a temporary line; however, the line was left as permanent, with no inspection or paperwork documented.</p> <p>Conversations with DNC, DNE, and ONP engineers determined that the line could not be a fire Protection Line (system 26) since the fire protection system did not utilize SS nor any tanks in the described location. System 77, waste disposal, utilized both SS piping and tanks on the described elevation and was assumed to be the system in question.</p> <p>The cognizant DNC and DNE system engineers (the DNC engineers consulted were cognizant of system 77 back to 1973) had no knowledge of any temporary SS line being installed much less the described case of one being installed temporary</p>			



## Executive Summary Table #1

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-964-002 and PH-85-035-001 (Continued)			<p data-bbox="472 189 926 249">and left permanent without proper paperwork.</p> <p data-bbox="472 279 926 1035">A review of the applicable flow and physical drawings with the aid of the cognizant DNC engineer as well as conversations with DNE revealed that only the tritiated drain collector tank, had 4-inch SS lines coming from elevation 713. There were six of these lines shown on the applicable drawing. According to this drawing, all of these lines were class H; therefore, they provided no safety function. A comparison of the tritiated drain collector tank and the floor drain collector tank piping installation (by field inspection) with the applicable as-constructed drawings revealed no discrepancies.</p> <p data-bbox="472 1065 926 1380">According to drawing notes hydrostatic tests did not apply to these lines (QCT-4.37). Also a drawing note stated ". . . all system piping shown is TVA class H unless indicated otherwise . . ." The line and grade procedure was not</p>			

## Executive Summary Table #1

ISSUES	SR	NS	FINDINGS	CAUSE	CORR ACT.	COLLECTIVE SIGNIFICANCE
IN-85-964-002 and PH-85-035-001 (Continued)			<p>applicable to the sections of pipe in question since they were embedded drains having no segment ID. The only documented inspection applicable to these class H embedded drain lines was DEC-QCP-2.2, RO, "Concrete Placement and Documentation." Paragraphs 6.5.1 and 6.5.4 stated that the pour card is the control and concrete record for each pour and that the card functions as a release when signed by the appropriate engineers and Construction Shift Engineer. The pour cards applicable to the concrete where the drain lines come through the ceiling (692) above the tritiated drain collector tank had been initiated by both the lines and grades engineer and the mechanical engineer. Their signature signified that installations conformed to drawings dimensional tolerances and notes.</p>			